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THE PRACTICAL PAPER, 1884.



PART 101 PLATE P-33



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GOVERN

T-20. Inhabited by the Ringer. Chick established a site at 10 miles NE of Laramie River & 10 miles S. The nest was built in a dead tree in the Laramie River—nestlings first hatched about May 15. Nesting pair were seen on May 15, 1940, and again on May 20, 1940, and again on May 22, 1940. Nesting pair were seen on May 15, 1940, and again on May 20, 1940, and again on May 22, 1940.

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departments

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第六章 計算機應用

"Load up the cart and test-drive it before you hit the checkout counter."

—TD-11. molecular processes and disease. Paul Myslinski



WHEN IT COMES TO INNOVATION,
OUR LATEST TOOL TAKES AN INTERESTING ANGLE.
ALL OF THEM.



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Writer AMY LADD-WHITBECK, who reports on the design of the magazine's Adams show house ("Creating a New Class," page 124), often uses the way architecture journalist Edith Holden wrote about building for the 20th century. "The house had an open plan and central living room, but a more formal dining room with a gilded oval and mahogany window." Having just built her own house north of the city, she especially enjoys looking across town. "I'd like to add one to my photo inventory."

Photographer SANT WELLS: 1000 loves the intricacies of big engineering projects. "I like to see how things are put together," he says. That pretty lesson makes him just the person to come to in the case of the renovation of our Adams show house over the coming months ("Creating a New Class," page 124). While there, Wells finds also times to pack away a few ideas for upcoming issues. 1913 and under writing house in Decatur, Georgia.



When GEORGE KODD photographed the kitchen-redone at Sherry Cole's ("Revolutionary Change," page 10), he found it a reminder to everyone: "I've seen a lot of kitchens on my travels, and none seem to be right out of 'Star Trek'—you can't believe anyone actually cooks there! This room is as functional as it is beautiful—it's rocket." Kodd, whose work is also featured in "Cabinet Showcases" (By Design, page 56), shoots for clients ranging from Target to Inglenook Gondolas.



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LETTERS

Rescuing the Past

I think I enjoyed reading between the lines of Ryan Ristau's article about his Krookos' ambitious home renovation ("Postgraduate Work," June 2001) as much as I enjoyed the article itself. It seems that their quest went beyond the remodeling of his house and into the restoration of his difficult childhood with a side journey into making peace with his depressed father. The creation of his new cowboy horse from its "scrapping, restitching, and rebirthed" roots in the perfect metaphor for his growth as an adult, a homeowner and a young man.

Kudos to Ameriwood for helping him with a job well done. These story arcs are a joy to read and a delight to imagine!

Mark K. Gammie, Bremerton, Wash.

Toys for the Memories

I read with interest your article about tankless, on-demand hot water heaters ("A Business Job," June 2001). I spent some time living in the U.K., and, aside from auto-thawing early morning, I was much impressed with the systems. They are compact and efficient—and the folks over there seem to have small apartments when not called upon to supply hot water! Brilliant!

In this age of energy concerns, these systems are something that we should encourage. Keep up the great work.

David W. Cook, Toledo, Ohio

Before investing in a tankless water heater, you should investigate how it performs under low-flow conditions. During small jobs, such as washing dishes or showering with a few threads of foam until automatically shut off the burner. In our case, attempts to adjust flow, temperature, and the like simply were futile. Instead of heating showers in cold water, we abandoned our tankless system.

Winston H. Burns, Atlanta, Ga.

Good point: Tankless fixtures do require a minimum level of water flow in order to switch on. But in many water systems, the preset "activation point" is 1 gallon per minute or less—basically a steady trickle.

Payoffs Advice

You guys must have noticed my post! The day I received my June 2001 issue, I opened it to find your Homeowner's Handbook feature on "Laying a Bluestone Patio." On my kitchen table, nearby happened to be some landscape plans that I'd been working on for just such a patio. Your advice will come in handy when I tackle the project. As an added do-it-yourselfer, I always seem to find timely and helpful articles in T.D.M. magazine. Whether installing my bathroom, refacing floors, or installing my patio, you guys seem to anticipate my needs and provide helpful guidance. Thank you.

Nicholas Lutz, San Francisco, Calif.

Making Oil and Water

For years, dealerships have been trying and industrial enterprises have been finding government agencies for the type of petroleum removal described in "Black Magic" [July/August, May 2001]. Not only should consumers avoid petroleum products for driveway cleaning, they should use environmental-safe biodegradable products and make sure they allow the contaminated runoff and excess oil to properly

We share your concern for environmental responsibility and assure you that the cleaning solution applied to the driveway oil spots was both petroleum-free and biodegradable. What we suggest, however, is that the user(s) from rinsing the cleaner shouldn't be allowed to wash the oil, but should be absorbed with cleaned, fine oily cat litter or an equivalent commercial absorbent, which can then be bagged and placed in the trash or taken to your local landfill. For more information on safe disposal of oil and other hazardous waste, visit www.epa.gov/oehp or call your state's department of environmental conservation.

punch list

As a former owner/developer who is involved in the building industry, I am a fan of "Painting Exterior Walls" [June 2001]. However, I would like to add a few comments. Please determine full costs, add-ons and hidden charges. Remember that you will be held responsible and may be liable in other courts.

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OUTTAKES

BEHIND THE SCENES AT THIS OLD HOUSE

BY JORDAN BREW

Back in January, when the show wrapped filming at *This Old House's* 2000 fall project in Charlestown, Massachusetts, and the magazine called its winter home, the backyard landscaping was only 70 percent complete ("The Outsiders," March 2001, page 78). Before the ground frost in December, landscape contractor Roger Cook had installed the wood privacy fence and both patios—one for homeowners Dan and Heather Oliveira.

Firmly Planted

and out for their trees—and planted some large flora, such as the honey locust and golden cypris tree [the latter appears at far left of photo] along the rear retaining wall. But work on a concrete paver walkway from the gate to the rear deck's patio hadn't yet begun, and less hardy roses and shrubs were still needed to fill out the planned area. "The bones were there," Roger says. "But we weren't able to put on the party dress."

Roger returned in March to lay the walkway, but he had to wait until early May—after the ground thawed and tender plants would no longer be at risk—to plant large yew and holly trees underneath the spiral staircase, where they form a natural screen between the patios; white rhododendrons (above center) inside the retaining wall, and white 'Sweet Autumn' elaeagnus and purple 'Koehnei' skimmia vines to adorn the fence and the base of the stairs. Dan put on the finishing touches later that month by planting and mulching impatiens and perennials for colorful ground cover along the fence. Just in time! Not long after the space was finished, it debuted before an enthusiastic public when Gardens for Charlestown included it on their third annual garden tour.

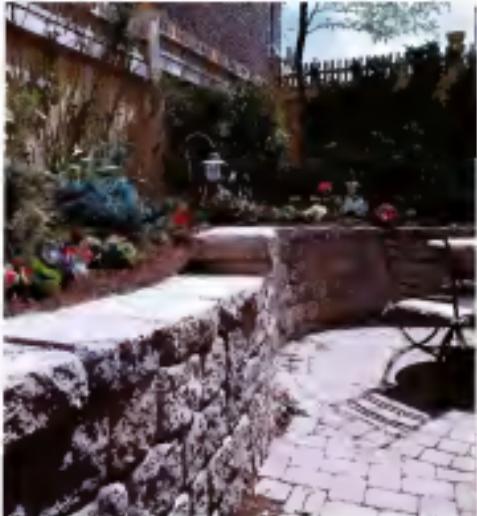


PHOTO: JORDAN BREW

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OUTTAKES

Rescue Efforts

The CAF House shares an oasis in the desiccated old-preservation movement with a number of nonprofit groups, including the National Trust for Historic Preservation, which seeks to protect threatened architectural and historical landmarks. To focus attention on jeopardized sites across the country, the trust has for the past 14 years curated an annual list of America's 11 Most Endangered Places. The places in peril—whether due to neglect, encroaching urban sprawl, or thoughtless public policy—exude everything from historic homes to modern emblems of buildings, city neighborhoods, and even land trusts. "Our role is to help people realize the diversity, richness, and fragility of America's heritage," says Douglas Young, a trust spokesman.



Of the more than 320 sites designated since 1988, only one has been lost entirely. The 1947 Mayes Hotel (1998 list) in Reno, Nevada, has been used as preparation for future development. The fate of many famous designations remains in doubt, but success stories include Rhode Island's Southeast Light (1990 and 1994 lists), where the local community pushed from an existing cliff in 1993, and New Mexico's Mimbres Castle (1997 list), now undergoing a \$10 million renovation with public money to open this fall as an educational study center.

For more information and to view photos of all the site's past, visit www.preservation.org/11list.

Demo Helper

When T.O.H. general contractor Tom Sibley needed to take down a wall of the new project house in Massachusetts, demolition contractor Bob Diagler lent him his worker's sledge to do the job. Above: chisel back to the Bronze Age, when they were developed as carpenters' tools for trimming and shaping timber. A woodworker would swing the tool low like a poster, along the length of a tree trunk held horizontally and the curved, interlocking blade, set perpendicular to the handle, would chop away at the wood. Though with the advent of power tools, the carpenter's sledge has largely fallen out of favor, variations still find their way in the job site's ten-down purposes. This head of a sledge's edge, like that of its woodworking cousins, has a squared back to accept the blows of a stiletto hammer and drive it deeper under floorboards. But it was this sledge's narrow, straight, 14-inch replaceable blade (long for an sledge) that Tom found most advantageous. "It helped behind left or drywall, the long nose makes more contact with the framing members, making it a better fulcrum," he says. Plus, the yoke-long handle puts more space between me and the job which means more power and leverage." These features help speed and ease a demolition job. As Tom explains, "Going it with a hammer and a crowbar would take forever."

11 MOST ENDANGERED HISTORIC PLACES FOR 2001

- 1. CRAVEN Campus, Eureka, Mo.** This beautyful landscaped example of 1960s office architecture is set to be demolished.
- 2. Historic Jackson Ward, Richmond, Va.** "The Heart of the South," this district has already taken prey to insensitive development.
- 3. Miller-Putney Barn, Grant County, Ind.** This crumbling 18th-century livestock barn is emblematic of the Heartland.
- 4. Tidewater Valley Rock Goals, Appalacian mountains. It is being cleared by rampant construction for the tourist trade.**
- 5. Pak Kai Temple, Margate, Calif.** The elaborate—and last standing—1880 site was overruled by Chinese immigrants.
- 6. Carter G. Woodson House, Wash., D.C.** This abandoned 1920s African-American townhouse is in need of historic renovation.
- 7. Historic American Indian leaders, nationwide.** Most threatened by insatiable pressures of intense media publicity, stand neglected.
- 8. Los Encinos del Fijo, Lower Rio Grande Valley, Tex.** Poorly planned growth is poised to destroy the character of a 200-mile stretch of river key to Mexican-American history.
- 9. Paauai Harbor's Fort Hawaii, Honolulu, Hawaii.** Abandoned military structures near Bishop's Pier are threatened by development.
- 10. Pristine stretches of North Dakota's more than 400 ancient champion cottonwood groves are struggling due to lack of maintenance.**
- 11. Shoshone Creek Bridge, western Lincoln, Neb.** A proposed highway would cut through this cluster of heritage names.



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HOUSE CALLS WITH STEVE



Personality Change

An outmoded kitchen gets a remodel that's in sync with the house's style

The Montclair, New Jersey, real estate listing was calculated to seduce "1950s Eng-style Tudor, on prime lot, 6 bds." "I R. Dream Kitchen," bragged, Karen and Jack Wagnleitner drove over in earnest. The couple, both from the area, had been looking for just such a home, a place where they could raise a family. Like many buyers, though, they one had the facts behind a hunk of type. The worn, narrow kitchen, which had been designed and fitted out by General Electric in the 1950s, did exemplify the modern efficiency that America women craved—back then. In addition, though the Wagnleitners' 1950s-style abode was "ugly," Karen, who loves to cook, thought the Wagnleitners' sweet aquamarine, she said, was "soothing to the nose's sense, bucolic charm," they soon abandoned the idea. For one thing, Karen found out she was pregnant with twins and realized the she and Jack would need a larger space in which to prepare and eat meals with their lots. For another, the 50s-elements in checkerboarded with the Tudor details in the rest of the house.

The blue metal cupboard inside, the walls were covered with tile patterned paper, the ceiling was dropped acoustical tile; and the flooring was dismal speckled linoleum. As a final flourish, there was low-key room partitioning on the wall opposite the cabinets and sink, where a cutout alcove was still required. "It was a person party," says The Old House Inst. (Steve Thomas), "but not worth saving."

PROBLEM

"The kitchen alcove is a deadweight, not serving," Michaela designer Sally Ross says. Across from the stage, G.E. had run a chase to carry wiring and pipes, creating a niche for the

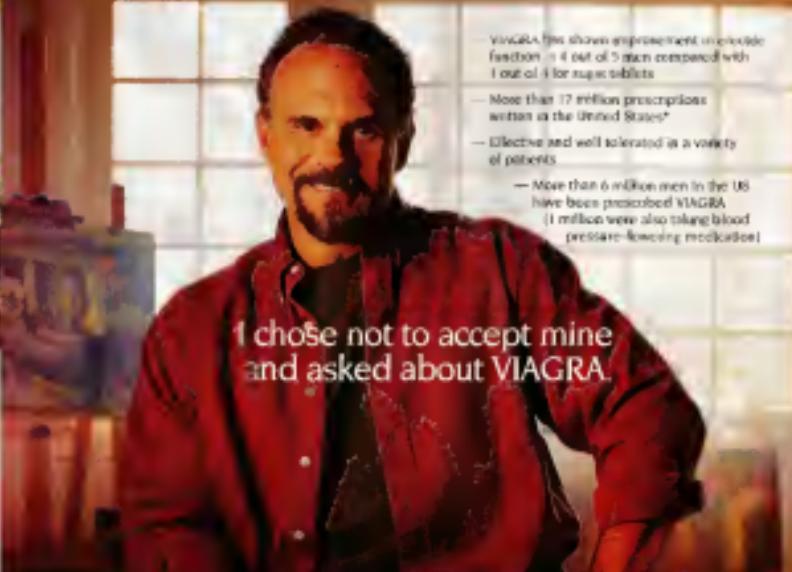


The 1950s kitchen (LEFT) may offered spaciousness in blue. After unsuccessfully trying to find a contractor to do a plan change, the Wagnleitners called in Karen's dad, who came along to the project to observe her partly after school. With an amateur door and safety and open shelving, the updated room follows rhythmically on trend with the 1950s house.



BY BO MILES PHOTOGRAPHY BY GEORGE ROSE

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HOUSE CALLS WITH STEVE



PHOTO BY RANDY HARRIS

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**Tips for unsticking windows, removing soot stains,
and choosing a shop floor**

FLASHING BLEED

Our house is fairly new, with painted cedar siding. Unfortunately, the copper flashing above our windows seems to be leaking the paint on the adjacent boards—a terrible color! What can we do? We're tired of repainting the wood.

Marcos Perez, Glendale, Calif.

For years it was thought that cedar and redwood contain natural preservatives that stabilized copper when in direct contact with metal. Recent studies from the Copper Development Association and the Western Red Cedar Lumber Association dispel this long-held belief. According to David Hart, manager of architectural services at Arrow Copper Products, corrosion is the likely source of your problem. When sulphur pollution such as sulphur dioxide combines with moisture, they produce acidic acids that dissolve the copper oxidation on the surface of your siding. The stains you see are the result of this brass debbling over poor siding. Because these stains will be more evident on light colors, you could see a darker point might camouflage the discoloration.

Put what's worth. I've removed a lot of staining on the siding under the original copper flashings on my house, but it's not bad enough to have ours. The findings don't all my woodlands and doors in lead-coated copper, and these areas don't seem to have any staining problems.

FLASHING A FORCE

We are planning a new porch for our home, since we're bumping up the foundation to support it, we'd like to build it below-grade.



WORKING IN STAGES

The floor joist wiring in my house is very old, and takes up most of the entire house reserved. However due to financial constraints, I'm thinking about having one room done at a time, so I can stretch the work over a longer period. Does this make sense?

Louise Warren, via e-mail

I understand your reasoning, but doing one room at a time will, in the long run, cost more than sealing new wiring through the walls at once. It should be a lot less disruptive to you, and easier for

climate-controlled house offices underneath. The office would be accessible through a walk-in closet door in each basement. Our inability, however, could be blamed more on much of the construction. What do you think?

Jerry von Kneise, Kenosha, Wis.

I'm afraid I side with your builder. A screened porch is partially open to the elements, so water will easily find its way through the floor to whatever you lay down beneath it. With that in mind, the only hope of keeping water out of the office would be to first build a sloped "roof" before laying the porch floor sheathing, and you'll have to cover that roof with an absolutely waterproof material—and I don't know of any—because the porch floor will prevent you from making repairs.

If you want a really nice sun room and a serviceable, low-maintenance floor underneath, make a fully enclosed, three-season porch with screened windows that can be closed up in inclement weather.

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EXTERIOR DOOR?

I'm remodeling my kitchen-and I would like to have a pocket door between the kitchen and an attached sunroom. The sunroom is not always heated, so this will have to be some sort of insulating-grade door, but I don't know a thing, anyone been anybody else? If not, maybe I could have a separating glass partition and close the third side with plywood and drywall. Can you tell me reasons why this wouldn't work?

—Cameron Gammill, Louisville, Pa.

There's good reason that you don't find pocket doors for the exterior of a house. They would be horribly difficult, if not impossible, to weatherize and seal. Also, as you well know, if a single glass door meets a pocket door, there are several reasons why this is a bad idea. First, you wouldn't be able to properly support the plywood or drywall on the fixed side of the patio door—you'd end up with a surface that flexed like a drum skin. Second, the portion of the wall would be cold in the winter because it wouldn't be insulated as well as the rest of the wall. Third, with no access to the fixed portion, the door would be a nightmare to service. Fourth, covering the entire of the fixed door with a panel to match the existing siding would be a headache.

The fix easier solution would be to install a pair of customizing carriage-grade French doors, a fully glazed bypassing passage door, between the two rooms. This might take up some valuable floor space, but at least you'll end up with a weather-tight, weather-resistant passageway.

POT HOLES FORMED

My wife and I purchased a neglected early 1900s ranch house with lots of potential. One of the many projects I have in mind is to change the roof lines of the houses, perhaps by adding a pair of dormers. Is it possible to penetrate the sheathing and just lay shingles on the roof so

that installation, rather than go through the normal "kick-back" process?

—Renee Brinkman, Roseville, Minn.

The roof pitch or roof pitch houses in too shallow to allow dormers. But even if you did have the pitch to make it work, you can't just screw a dormer up on the roof and call it a day. You'll have to add a structural support on the roof framing for the dormer's extra weight, and you'll have to strip off a lot of shingles to move the new area into the dormer's flanges. As far as貫ching a dormer entirely on the ground, you'd need a crane to get it to the roof, and you'd have to overhead it with steel the entire. For partially貫ching dormers by breaking the walls and carrying all the eaves on the ground, but it called for a lot of planning and precise cutting. I think you should stick to the dormer in place—it still works great.

ROCKY STONE

The stone above the opening of our fireplace is intact from soil. I have tried to scrub it off with soap, water, and a soft brush, but nothing seems to work. What would you suggest?

—Kathy Morris, Huron, Tenn.

One approach to removing stain from stone is to dissolve a half-to-a-full cup of muriatic phosphoric (TSP) in TSP solution in a gallon of hot water and then scrub the stain with a stiff-bristled brush. This is messy work, so protect nearby surfaces from the cleaning solution as well as from the very strong water. Also, wear rubber gloves and protect your eyes with goggles.

If you haven't already tried cleaning it off, you might have had some success with a latex-based stone-cleaning sponge. It's used without water to clean and restore staining in. You can still give the sponge a try, but if another eat the TSP works to your satisfaction, the problem may be concrete and not, and that's fine as well as a professional, who will probably use a concrete-staining cleaner or muriatic acid to remove the stains.

REINING PLAT FLUTED

The fluting it's difficult to locate good, flat steel to use in my steel and arched projects. Has anyone, perhaps by adding a pair of dormers. Is it possible to penetrate the sheathing and just lay shingles on the roof so

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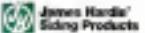
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ASK NORM

Find out there's even halfway acceptable! Or do you have any suggestions for taking out the wavy?

Steve Thomas, Beaumont, N.J.

When you lay a decent plywood floor over subflooring—and I assume you are using construction-grade CDX plywood, the board won't last forever—but it could be worn or lose flat. But even a panel that's slightly out-of-kilter will be far after you cut a room smaller space and assemble than it's severely warped, though not much you can do about the poor weather.

Birch plywood is what I use more for cabinetry, and I generally buy it directly from a plywood distributor, not from a retailer. You get better quality, a wider selection of products, and deeper grades. If there isn't any such outlet nearby, there's a good chance your local lumberyard can special-order what you want, the supplier might even deliver it directly to your shop, saving you from having to pick it up. Once the order arrives, you can cut away with a trucking them on edge, as long as you're going to use them soon. I try to keep only as much as I'll need for a particular project. That way it's not sitting around the shop, waiting for an excuse to warp.

DOG-PROOFING A WOOD FLOOR

Our house has solid wood carpeting, but we would like to replace it with solid wood or engineered wood flooring. We have three dogs, though, and we've come across mentions and photos of the floor being ruined with carpet.

John Tugan, Philadelphia, Pa.

No matter what finish you have on any wood floor, engineered or solid, dogs will eventually scratch it. But if the wall-to-wall carpeting has no grip, you can take some simple steps to minimize the inevitable damage. Put down area rug carpet runners, particularly in high-traffic areas where traffic is concentrated along a narrow path, keep the dog's claws well-clipped, and don't negligence with dogs' challenges (such as for playtime). Nothing scratches a wood floor faster than a dog scratching for a chew toy that has rolled under the sofa, or a dog who had weird, unexpected hardwood floors, and our dog had to stay off them.

Of course, scratches finish can be repaired: If you live wood floor in much as you love your dogs, you'll just have to refresh them more often than folks with pets do.

BLINDICINO WINNING

We live in a 1918 Dutch Colonial. On the inside of the houses, there are fixed-position aluminum blinds (these double-hung windows that should open but have all been painted shut). Now it takes two blind cleaning/draping the outside glass! Also, we'll need some way of keeping them open, so the blinds might move differently when the house was built with many items back in the '10s. To complicate the situation, the glass is sagging, though it doesn't seem to be leaving a cavity at all.

Nikola Ritterer, Cincinnati, Ohio

Have someone come out to take a look at your stained glass. That's not a subject I know a lot about, so I'll defer to local experts. But I have done more than my share of window caulking over the years, so here's what I recommend. First of all, there's a good chance your windows are covered with layers of lead paint (a home lead test will be able to identify the toxic metal). If your windows are lead free, stop in the next paragraph. If not, you need to take extra precautions to protect yourself and your family from the lead dust and chips that they soak well enough. Tape a broad plastic sheet to the floor where you're working, wear a respirator and a designated Tyvek suit, and lay out area a vacuum with a HEPA filter. Lead dust can pass right through a regular vac and be blown around the house. Once the safety gear is in place, wet the lower sash with a damp rag.

Now grab a utility knife with a fresh blade and score the panel's bond at the sides and bottom of the sash, and slide the sash rail where the upper and lower rail overlap. Don't bother with the rest of the upper sash—giving it a tap is probably more trouble than it's worth. Then gently work a thin, flexible 1x2 inch wide putty knife between the sash and frame boards, and push the window upward as hard as you can. If that doesn't loosen the sash, take off the made-up strips that hold the sash in place. Again, you'll first have to

cut through the joint between each sash and its frame. Sashes are sometimes screwed onto their plates, but if they're not, use a screwdriver to remove them. Once the sashes are off, you should be able to take the rails.

You can then sand or scrape away any excess paint, caulk or old lead. In that case, do yourself a favor and use a foam roller and a salt chemical stripper to take the stain down to bare wood. This is also a good time to renew the glass by holding the glass in place (see "Putting It Back," September/October 1996, page 63). Then, before replacing the sash, spray the panels where the sash sits with a non-volatile dry lubricant, like Teflon or silicone, or rub them with the ends of a candle.

Because the weights are out of calibration, you can prop-open the sash with a stick. If you want a more sophisticated solution, get an estimate on having panels custom-made. These plastic pieces attach to the panels at each side of the window and provide a frame fit against the rails so it will stay open where you leave it. This isn't a job for a homeowner, though the sides of the sash will have to be recessed slightly to accommodate the frames' thickness.

BRICK WALL WORK

After we decided to put a walkway through the backyard, we went to a brickyard and purchased materials that already matched those in our house. We excavated the walk area, leveled the ground, and laid the thick evergreen base of sand. Next, we laid the bricks and began to demonstrate some of the crisscross and finally fell apart. What did we do wrong?

Cathy and Mark Chumley, Denver, Colo.

You probably already guessed that: You bought the wrong brick. I'll bet what you have is called face brick, which is fine for building walls but is too porous to use as a walkway surface where temperatures dip below freezing. What you need is honed-over paver brick, which won't absorb moisture from the ground as face brick will.

The best replacement I find for old brick would be pavers made of GRC, or concrete weighing. The designation isn't stamped on the material, however, so get your new brick from a supplier who knows his stock, and be sure to know what you'll use it for. I know this is disappointing, but look on the bright side: You've already done the digging,

ASK NORM



TOP CHOICE FOR SCREEN FLOOR

I had a single step kit myself and covered the floor with old tongue-and-groove planks with a clear varnish. I wanted a wood floor that I could clean and thought waterproofing would be better on my jobs. But what kind should I install as the permanent floor? It has to be sturdy and attractive.

Dale Linn, Portland, Ohio

Wood is certainly much more forgiving than concrete, but unless you get a really good deal on oak, I think you'll find that laying plywood as the floor floor has lots of functional advantages. You can renew



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blocks to the floor when you're building assembly jigs or building wood furniture work—think about having a long layout table. If you put flat sheets with a short floor, I think you'll find it looks preposterous, but not so much so that you worry about a few drops and piano splinters. I'd put a single row of polypropylene over the floor just to nail it, but nothing more. A glorified finish would be no slippery, and a polished surface would be a maintenance headache.

In the near future, I'll be building a small shop near my house, and I plan on using 8-inch tongue-and-groove plywood for the subfloor and 5-inch AC-grade plywood for the finish floor.

PANELING OVER STUCCO

I recently mentioned the here open walls off my patio, creating a combined dining room and greenhouse. I would like to cover what were the exterior walls of the house with horizontal paneling, but the walls are stucco. How can I put paneling over walls in uneven surfaces?

Lakeside McGuire, Western, Calif.

You can do exactly what basement remodelers do: what they want to cover concrete block walls with dry wall like drywall drywall. These 1x3 pieces of wood, sometimes called strapping, provide a nailing surface for the board. First thing to do is screw lengths of strapping directly to the stucco around the perimeters of all the door and window casings. Then screw or horizontal rows of strapping 6 inches from the ceiling and floor, and every 16 inches going up the wall. Also, screw several wraps every 48 inches between the horizontal strips. I recommend screws that are long enough to penetrate the wall fastening. These rough drywall screws will probably suffice.

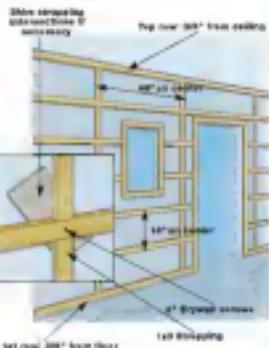
If the stucco surface is very rough, you may have to skip steps behind the strapping intersections to bring the facets of all the framing into the same plane. A plumb bob and horizontal reference lines should tightly hold a couple of

nails will prove invaluable here.

Once the strapping is done, simply nail the boardwalk in place, keeping the edges of the sheets plumb. If the panel floor is concrete or brick, keep the bottom edge of any boardwalk about 8 inches above it to prevent moisture from seeping up, and cover the gap with boardwalk molding. You might want a crown molding to hide any gaps in the ceiling, as well. The most challenging finish detail will be where the panels meet windows and doors.

By the way, because thin drywall walls is likely to see some pretty massive temperature fluctuations as the seasonal change, you could also use 6-inch thick boardwalk made of medium density fiberboard (MDF) as an alternative to a 4x8-foot panelized product.

MDF, like the panels, doesn't move as much as solid wood, and it is now commonly available in boardwalk profiles with a slotted edge. You should be able to get the MDF in 4-foot lengths, which will save from floor-to-ceiling. If you use the MDF boardwalk, you'll be wise to eliminate the vertical strapping runs and put it to the horizontal lengths of strapping. ▀



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Gardens Under Glass

Plants flourish in a climate-controlled habitat

BY FRANCESCA LYMAN

At summer's end, a dazzling array of potted plants greets visitors to the Nedley, New Jersey, house belonging to Greene Hardy. As the winter turns cold and plants go dormant, their parasitic gardens can continue to flourish in his home because he transforms them into a greenhouse. Elaborate skeletons such delicate imperial racemose as New Zealand flax, red domes of other coastal plants, like cordyline, myrtle, lis, and angel's trumpet, this would perish outdoors even temperatures comfortable. "No matter what the weather, it feels like paradise is around here," Greene says.

By turning back a greenhouse, Greene is carrying on a tradition that dates back to the 16th century. According to Max Whool and Anne Warren, authors of *Glass Houses*, visitors seeking European antecedents made an art of nurturing potted plants known as "orangeries," whose light, sealed enclosure captured the sun's light and its heat, which was supplemented by woodstoves.

One doesn't have to be in the master class, of course, to delight in a glass house. Indeed, over 4,000 green houses, at a variety of price points, are built in the United States each year, estimates Charley Sian, of Charley's Greenhouses and Garden, in Moosonee, Ontario, whose own sales of greenhouses and accessories such as benches, doors, and borders have doubled over the last two years. In addition to elaborate, custom-built models—which can set their owners back hundreds of thousands of dollars, do it yourself greenhouses can be purchased for as little as a sturdy \$180 via mail order.

Building a glass house requires forethought, purchased



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on the land of plants you want to grow and whether you plan to use the space year-round. The habitat demanded by the species you tend will affect the building's size, orientation to the sun, and heating (plus cooling at risk factors) and landscaping features, all will affect the price. "A 'maximist' greenhouse can be compared to an ecosystem with no own enclosures, in which everything is integrated in the right balance to sustain all the forms of life within," says Jason Marullo, director of publishing at the Brooklyn Botanic Garden and author of numerous books on ecological home and gardens design.

There are three basic habitats to choose from the "cool," with temperatures kept between 50 degrees at night and 70 degrees by day, preferred by plants such as camellias and cyclamen; and the more common "intermediate," such as Greenery, which tones the nighttime low to a more moderate 53 degrees and daytime temps into the 70s, requiring supplementary warmth from a space heater or blanket system in northern areas where the winter temps freeze. With that extra heat, most annuals and perennial plants that need to be protected during the winter, such as succulents, bromeliads, and some species of orchids, should be happy to either overwinter. The third type, "tropical," sustains temperatures—65 to 70 degrees minimum by



The greenhouse was designed to be the focus of the guest house it is attached to. Bright light walls protect the interior from sunlight and provide a backdrop for outdoor plants.

HIGH-TECH CONTROLS

HEATING Although electric heating is a option, radiant heat seems to be more efficient alternative to space heaters. It's also much better for the plants because it "gives roots a warm, consistent environment by heating the soil evenly from beneath—rather than heating pockets of hot air or the plants above," says Michael Rasmussen, gas furnace manufacturer and accessory supplier.

Hydronic or electric base systems cost out up to \$30,000. Or just install a complete radiant heating system (connected to the underside of the table), which isolates heating, a pump, and a thermostat, attached to an existing water heater. outfitting two or

three greenhouses will run \$400 to \$50,000, depending on the total square footage.

IRRIGATION "Homeowners are always excited about their greenhouse until they discover the work involved in watering," says Rasmussen. When coupled with a standard irrigation system, a drip system lies on top of the soil and will soak it (and plant roots) directly without overwatering (a common pitfall of watering

with a garden hose), via polyethylene drip hoses, which feature pressurized in-line emitters or custom-punched holes with external emitters. A homeowner-installed system can be purchased for as little as \$500—a bargain, Rasmussen says.

WATER BALANCE "Sprinklers are the most thorough way to completely soak the soil," says Rasmussen. "They don't wet everything in their path, unlike mirrors, which can supply uneven soil irrigation." By releasing water at rates of 1,000 gal per minute (system runs between 30 and 60 psi), high-pressure irrigation need run only a few seconds to sufficiently saturate the soil, thereby lowering the temperature almost instantaneously. Costs for sprinklers start at copper-delivery pipes, completed with insulation around the inside perimeter of a greenhouse, total between \$10,000 and \$20,000.

POWER Although real solar panels are abundant in every greenhouse, incorporating them big a driving motor power and using them as a thermal is a low option I'm encouraging more and more," says Paul Zorn, owner of Andover Greenhouses. Motors designed to power the opening and closing of roll-up roofs begin at around \$400; those for windows cost slightly less.

SHADES Electric shades are the most convenient way to "take the edge off of the sun," says Rasmussen, noting that "the more conditioned the space, the faster the air heats up and turns sticky," increasing chances for disease and heat fatigue. Shades also help reduce heat on cold winter nights. Prices run from \$400 for vinyl to \$4,000 for translucent versions. —Nancy Luskman



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night, up to 80 during the day—caused by temperatures on heat-loving plants like caladiums, or frost-susceptible vegetables like tomatoes.

No sooner when land managers are enthused, all greenhouse require a heating system to adjust for temperature as well as winter temperatures. And an heating system installed under the benches heats air to more constant temperatures than does a space heater set on the floor, but a radiant greenhouse may also require solar-powered heaters. To ensure an equitable climate for its delicate flora during the winter, Geiger opted for a radiant heating system controlled by a thermostat. "The strategy of a thermal mass is crucial," says Greg Coates, of Architectural Glass inendale. "There's almost a wall there, where heat accumulates," he adds. "And, make sure it's one placed where sunlight will strike it."

Besides the temperature range, what most distinguishes tropical houses from more temperate greenhouses is the level of humidity. A more humid species like leafy parrotia demands a higher level than that needed to sustain a "colder" plant such as a cactus. In temperate zones, portable or built-in misters and foggers add moisture to the air, to simulations, irrigation systems as additional, optional features. Cooling propane offers high enough temperatures to make the habitat more habitable for the plants. Together with window shades, foggers and misters help stimulate the mix of plants inhabiting each room.

No matter how it's fashioned, a greenhouse can be either frustrating or congenital in another structure, such as a house or garage, or offer advantages of the shared wall, which it parts it from the outside into the space. Because of exposure on all sides, insulating windows lose heat and are therefore more expensive to insulate in. An attached greenhouse is easier to insulate, the shared wall also allows for drainage to existing gutters. The only caveat because of humidity levels, the shared wall should be protected with a vapor barrier to prevent damp from leaking into the house.

Greenhouse floors range from a basic level-to-the-ceiling pebbled-rock, straight-sided "terrapin"—that Cottam designed for Geiger. There are standard models in any price range, but more allow customization of the shape and size to suit the owner's house and site. Although a frame can be constructed of wood, lighter weight, non-resinous materials of aluminum are now the more common choice because it is unbreakable by weather.

Inside the frame, the more critical element of any glass house is, obviously, the glazing. Polycarbonate glazing is less expensive than plain glass, but it can shatter, tempered glass is less apt to break than any type of glass. Readers, observe, and

LUXURIES

"A greenhouse is a miniature Eden."
—GEORGE HARRY

budget during the selection. In the coldest regions, double glazed insulated glass keeps cold air out better and requires less heating. Make sure there's a tight seal between the glass and the framework, to reduce condensation and moisture, which can damage solar heat and light.

Besides more plants require less heat in full sun (8 hours per day), a rectangular structure loses far more of its glazing on east-west axes, so sun can strike the full length of the building. To provide adequate clearance for plants of every size, a greenhouse should stand at least 9 to 10 feet high at the roof ridge and 3 to 7 feet along the sides, says Blattner. The structure may be placed all the way to the foundation, but many glass rooms, especially in northern climates, are supported by half walls of brick, as Geiger's are, or by stone or concrete blocks, to protect the building from ground movement or trees striking snow. Many greenhouse foundations are made of poured concrete slabs that are pushed toward the center of a room or across an earth berm if possible. An alternative would be to have an earth floor with crushed foundation walls down to the frost line, attention offheat as the ground will keep the greenhouse at 30 degrees when air minus 10 outside.

Inside the greenhouse, the desired placement of plants will guide how the space is divided and equipped. Many gardeners replicate some of the characteristics of the woodland growing shed, with benches and a ready water supply, both to irrigate plants with hose or drip hoses and to fill watering cans at a sink. Besides, of water-resistant vinyl or tarp, should be draped or propped to protect against damage. It is said that cloth bags of straw at the root, pot, and flats, insulation needs, and labels.

Plants rely on more than heat and humidity to stay healthy, like the breathe air maintains a balance between oxygen and carbon dioxide, which can be depleted with an adequate ventilation. Combined with variable-speed exhaust fans, shaker-style vents placed low on walls and near the roof create a adequate fresh-air flow and prevent undue heat buildup and stagnation that obscures the level of carbon dioxide available for growth. Finally, while most greenhouse gardeners like Geiger enjoy the hands-on involvement of a simple setup, others rely on hassle-free, high-tech gadgetry (see "High-Tech Controls," page 36) to make sure the outdoor environment is just as ideal as one designed by Mother Nature herself. Now that's paradise. ■

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On the Same Wavelength

A home computer network means there's no waiting in line to get online.

BY SAN AMSTER



Soon after Jeff Harber signed up with his cable company to have a high-speed Internet connection at his Silicon Valley home, an unexpected problem developed—not technical, but moral. "We both had our own computers, but my wife and I started to fight over who could go online," Harber recalls. They could have resolved the dispute by getting a second cable modem, but at \$400 a month plus installation, that wasn't an appealing alternative. So Harber tackled the bottleneck by installing a network that lets other roommates simply tap

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For networks that you want to handle the data transmission, high-speed Cat 5e patch cord [1] is the current gold standard for homes and offices. Fast computers or cables [2, 3] combine Cat 5e and other communication cables within a single PVC jacket, saving on installation costs. The fast cable contains three Cat 5 wires (for the network) and two shielded RG-6 coaxial cables for cable and satellite television. 20-ft. orange "fiber-optic" cable contains Cat 5 and RG-6 wires, as well as a fiber-optic line, for direct coaxial transmission over medium. All you need, however, there is no practical way for transmission to use fiber optics, which explains why even a fancy network jack [4] has ports only for an cat and Cat 5. A user interface requires a home gateway [5] to be plugged into each a port so that computers can swap files and share peripheral devices. But as the Internet network address [6, 7], which stores data via radio transmission. All it takes for a computer or any other device to part of it network is to slide a network card [8] into the appropriate port.

SECURING THE AREA

to use Internet connection through a local called a home gateway. He can check for early warning of his track portables on a laptop laptop computer; at the same time she is catching up on her e-mail dissertation on her desktop. After only a few weeks with his system, Blodot, executives can provide it as a software firm, because a networking enthusiast: "The technology is really going to change people's lives," he says.

Hearts is not alone at this thinking. The growing number of high-speed Internet connections provided by DSL and cable modems has been driving the demand for residential networks. For the advantages of networking go beyond allowing several household computers to communicate cost-free. Home networking offers the ability to control the Internet connection from a central hub between two computers. Internet messages between PCs in different parts of the house can replace shooting up the driveway. And expensive peripherals, such as photo-quality color printers, become accessible to every computer in the house. In the long run,



that's a slightly uneasy about the ability of outsiders to peek into their communications from the air. He plans to reduce that risk by adding firewalls to both of his computers, and he has written instructions about family members off the air entirely by starting it on a desktop computer. It's hard to do so, firewalls prevent the noise, rather than through radio waves.



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a network will likely become the house's central nervous system, managing and monitoring everything from lighting, security, and HVAC systems to such seemingly low-rent items as refrigerators, kitchen ranges, and washing machines (see "Breaking in Gossamer," May 2001, page 46).

Until recently, computer networks were solely the province of the business world. Only affluent had the resources to buy all the software and the different pieces of hardware needed to receive information from the Internet, convert it to a format that a personal computer can understand, process the appropriate pieces of data out to each networked device (printers, email-based servers, and other peripherals), and allow the smooth, uninterrupted flow of digital information between those devices or back out to the Internet. And only a business could afford to have the infrastructure needed to set up, troubleshoot, maintain, and constantly service such specialty computer-oriented craftsmanship.

Today, for homeowners, the key components of a home network are now being packaged into tidy, easy-to-install boxes costing as little as \$100. They can handle all the routing demands of an office network without the need for a technical degree or a closet big enough to hold all that hardware. You just plug the DSL or cable-modem line into one port on the gateway, which handles all the complicated routing functions, and plug each computer or peripheral into its own separate port. Some devices even incorporate the DSL or cable modems, eliminating one more gadget from the cluster that surrounds our computers these days. (The step-by-step instructions provided with the network let pretty much takes care of the rest.) Of course, big nearly everything networking companies, these kits don't always live up to their plug-and-play promises, but most won't come with troubleshooting programs that enable users the avoid troubleshooting user or user configuration problems.

EASING THE PATHWAY

For years, networking firms have been trying to figure a scheme to plug a computer or other peripheral into a standard electrical outlet and use the existing network of electrical wires to store data as well as power light bulbs and hair dryers. But so far, the only such system that makes it is HomePNA, developed with partners and backed by major high-speed broadband providers.

The HomePNA Partnership Alliance—a group of companies including Cisco Systems, 3Com, Intel, and Panduit—is developing new technical standards for piggybacking digital data onto

existing wiring while maintaining reliable speeds of up to 14 Mbps and complete compatibility between computers and their old-timers. It's in beta trials, but according to Alberto Montano, the president of HomePNA, full trials of systems using the now-standard demonstrate that it is possible to push data and household current through the same copper wires. Consumers won't be able to find out for themselves until well these systems work until the end of the year, at the earliest, when the first networking products based on HomePNA standards hit the stores.

Network Numbers

U.S. homes with personal computers
39 million

U.S. homes with more than one computer
34 million

U.S. homes likely to have more than one computer by 2003
\$1 billion

Residences with a home network in 1998
200,000

Residences with a home network in 2000
4.2 million

Residences likely to have a home network by 2004
15 million

Average number of networked devices in each home in 2000
3.3

Average number of networked devices likely to be in each home by 2004
5.7

—Reported by Kurt Johnson

wires. By the end of the year, there are likely to be gateways on the market that work through ordinary electrical circuit lines ("Easing the Pathway," below). At this time, however, the only way to piggyback data onto wires is through conventional re-



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TECHNOLOGY

phone wiring. As long as the wires have been properly installed and haven't deteriorated with age, it's just a matter of plugging each device into a phone jack and connecting the necessary software.

Standard telephone wires can handle current high-speed Internet traffic just fine, but with access speeds steadily increasing, at 10-Mbps transmission capacity (the same as wireless systems) in all but certain to become a logical bottleneck. Electrical contractors Alan Gilliat, who has worked on several *The Old Man* projects, no longer mindfully thinks twice when he's working on new houses and addresses, even if his customers plan to use the lines only to make telephone calls. Instead, he specifies Category 5 enhanced cable, a stripped-up telephone wire that can simultaneously handle up to 100 Mbps of high-speed data.

Cat 5 is nearly four times as expensive as everyday telephone wire, but that amounts to a mere 1.5 cents per foot—a bargain considering the transmission speed it offers. And it has to be handled with care. Pulling the wires too hard, bending them too sharply, or shearing them through too tight an opening can alter the way they react to moisture, plastic, salts, and aging phenomena. "You don't have to do them like eggs," Gilliat says, "but you do have to use some common sense." So put it in mostly Dutch houses. "Sheetrock also has a flesh compaction pack, which looks like a phone jack, needs its own separate cable and terminates around [it], so you can't have any splices along the way. Not can Cat 5 cable slant alongside electrical wires. The electromagnetic fields that the wires generate when in use can interfere with the relatively weak digital signal in the cable. Keeping the two lines at least a foot apart prevents against such interference.

While many people try to prove the Gilliat to��till the network's wrong, others do the job themselves. Mark Crotty, a director at Level3 Longhaul Networks, based the cables in a the crawl space

beneath his home in Redmond, Washington, to lay the wiring for his own Cat 5 network. An insurance for the future, he doubled each run of Cat 5 cable and put in parallel runs of coaxial cable that TV and satellite reception and fiber-optic lines, which carry light-based data through strands of ultrapure glass no thicker than a human hair, are the fastest—and at 30 Gbps a foot, the most expensive—transmission media yet devised; one strand allows could handle all the phone calls in the United States at any given time.

Crotty's fiber-optic lines aren't around, however; he hasn't purchased the media-convergence equipment (\$3000 to \$1,000 per coaxiated device) needed to change optical signals to telephone, or hired a \$100-per-hour fiber-optic specialist to spend an hour or two making the connections at each jack. Still, because it's the labor, not the cost of cable, that is the main expense in any wiring job, Crotty says it makes sense to buy the ubiquitous in cable technology in advance against future obsolescence. "I don't want to have to go back again and do double in the longrun of the system," he says.

Heber avoided any spider's web clutter by choosing a wireless gateway device for his home network. By plugging a wireless network card into his laptop, he can surf the Web while roaming the house or yard. The total cost: about \$300. Heber has found that the optimum location for his wireless router that room can a dead zone for the new system, but even with the coverage issue, Heber's network has begun, as he predicted, to change the way he lives. After breakfast, for instance, he takes out of his car, sits in his office, and plugs in his laptop, free from the distractions of the office. "Since I've broken up, my colleagues at the office haven't seen me as much in the morning," he says. "I like the freedom of being connected virtually anywhere in the house, or my capsule of it." Not to mention the peace that working has brought to his domestic life. ■

"Home networking devices are projected to be a multibillion-dollar industry as early as 2004."

—ALAN GILLIAT,
ELECTRICAL CONTRACTOR



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MATERIALS



A Safe Fix

Borates are a reliable way to protect your wood from rot and insects

In 1973, when quarter inch long powder post beetles began burrowing out of window and door trim in more than 10,000 houses near Mobile, Alabama, the building manufacturer sold the wood importer for \$1 million. In a defense for the test, U.S. Forest Service researcher Lester Williams, a leading expert on the subject of wood infesting beetles and wood preservation, testified that the Southern wood had been infested before it left the Amazon. In his research, Williams had learned that builders in New Zealand and Australia had been successfully treating semi-tropical wood with borates, the cheap, environmentally safe mineral compounds that had been used, in the United States as deodorizers and cleaning agents in borax laundry powders. Because of the test, Williams began work to introduce this pesticide

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MATERIALS



BORATES IN THE RAW

Boron, second of boron, the fifth element on the periodic table, and oxygen, along with carbon, nitrogen, calcium, are a few of others in borate. These are used mainly as animal preservatives and pharmaceuticals and certain boronates are found either in crystallized form (1) or are extracted from natural deposits in dry desert lake beds around the world. Borates borates can be mixed with boron and sodium to deplete and prevent the formation of wood borates (2) which can be inserted into drywall or plaster board. Boron borates are also refined into a powder (3) which can be mixed with ethylene glycol to create a preserving liquid (4)

allowing use into the country's wood manufacturing industry.

Twenty-eight years later, additional research by Williams and other scientists showed that borates can effectively deter many of wood's natural enemies, including powder post beetles, house borers, carpenter ants, termites, fungi, mold, even fire. Not to mention, excluding house pets and humans, it's about as toxic as trite salt.

To stop decay or insects that have already begun to do damage, builders and homeowners can apply borates to existing wood. To prevent infestation or decay, they can buy materials—everything from tools, shingles, and siding to insulation—with borate protection already built in. The U.S. Department of Housing and Urban Development accepts these materials as an alternative to treating lumber boards from soil with chemical-based materials and preservatives. And unlike posture-treated lumber, which has a greenish hue from the addition of chlorinated copper arsenate (CCA), wood treated with borates shows no change color, is safe to touch, and hasn't caused any environmental or health concerns. "Nothing we've tested prevents mold," says Whelan, now an independent consulting contractor. "But for an investment in material safety, I think it really helps people."

The way borates kill insects and other wood-eating bacteria is by poisoning the microorganisms in the insects' digestive tract that are needed to break down the wood's cellulose. In other words, a parasite that eats borate-treated木头 eventually starves to death. For carpenter ants and other insects that burrow through wood instead of ingesting it, scientists believe that borates trigger anal-

porous, the digestive tract when the insects attempt to process them. So far, studies have shown an ability to develop resistance to this type of attack. Borates also inhibit the wood-digesting enzymes caused by the many different kinds of decay fungi, and they are a potent mildewcide. As an added benefit, borates act as a fire retardant by forming a glaze that prevents wood from igniting.

The potential qualities of borates have been known for at least 300 years. Joseph Margraff, a Czechoslovakian professor at Vienna's A&M University who spent 25 years studying 17th-century fire-resistant materials, says the substance may have been used in a firestop solution to prevent flames from breaching a furnace. Back then, the mineral arrived from hot geothermal lakes in Tibet.

Not until 1872 were borates found in North America, when several large deposits were discovered in the United States—including a huge supply in California's Death Valley. Twenty-nine major haulers at first, a fact celebrated in old issues of U.S. Borax laundry powder. By the turn of the century, the substance was also being used for glazing ceramics and for tanning meat. In addition, borates had become an effective poison for cockroaches and other insect pests.

As early as 1904, the U.S. Forest Service began looking at borates as potential wood preservatives. But when they discovered that insects easily crawled right through borate-treated木头, studies took to the ground, there dropped the company from further testing. "Insects aren't effective in ground contact because they're more mobile and leap out of wet wood," Whelan says. Only later did researchers realize that one of the advantages of the man-

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all in that it doesn't put any where it's applied, but actually it goes in and conservatively it's damp, not spent, precisely where insects and rot fungi are most likely to attack. As long as there is nothing to draw because out of the wood—the wood will be preserved indefinitely. And because it disperses easily in damp soil, the compound cannot accumulate at levels that would be toxic to plant life.

Drinking the first disk water can essentially wash boron away, so it is possible to use wood treated with the substance to build outdoor decks or fences, even on wet climates. A strategy for slowing down or preventing leaching, in one point of plastic as a hor-

wood gets wet, backing the permeable cellulose fibers in boron compounds. They need replacing after they start working—generally once every three years.

Insects, when leaching is not an issue, boron can be applied or brushed onto any type of wood in two forms: as a raw oil treatment that is mixed with water and covers the wood, or as a gelled concentrate that is applied straight from the bottle and penetrates into wood. According to Bryan Blundell, a historic preservation expert who has worked with borates since 1985 and now owns them, both borate products work well enough that one does not necessarily need to add a garden sprayer or paint brush—it is usually sufficient to clean any stain. Applying more, he says, is a waste of money. "If you kill a big worm a ton pound borate won't kill a tiny fader," he says. It is quickly pointed out that users should follow the detailed application instructions that come on every package.

Perhaps the hardest part of using borates is finding them. Louisiana Pacific distributes borate-treated redwood products nationwide in lumber ribs and basic colors in the Pacific Northwest and Midwest, though not in as many as they'd like. "We're always looking to expand," says Steve Weinstock, director of marketing for Louisiana Pacific's specialty products. "But many lumber dealers simply aren't aware of the benefits of borate-based products."

A few companies—such as Wood Care Supplies in Washington, Journeymen.com and the Preservation Resources Group in Maryland (preservation.com)—will ship orders online to homeowners. But except for simple post-control products such as powdered coke-ash borax, borates tend to be marketed primarily to post-control operators, big-home builders, historic preservation experts, and indoor specialty tradespeople. According to Williams, historic-buildings materials can keep in stock at only three retail lumberyards in the country, and as many others they're special-order items. "Boron products are slowly becoming more available in this country," says Williams. "But until there's a bigger awareness of what's out there, the demand will be limited."



LEFT: Preserved boron products like BorateGuard add an extra layer of protection to wood. **MIDDLE:** Builders can now buy untreated wood and spray it with borate before framing a house. **RIGHT:** Products from preservation experts like borate-treated lumber and borate-coated deck outdoor lumber need to be stored in the ground or open air.



over. One gel product is designed to be applied by spraying onto small borax that have been drilled into the affected wood, getting the borax underneath paint. Another product can be brushed onto the below-ground surface of a new fence post, which is wrapped with plastic and kept right before being set in the ground.

A second strategy for using borates outdoors is to simply replace the preservative in old fences over. The easier way to do that, a practice commonly used by utility companies to extend the useful life span of their telephone poles, is to insert boron rods into holes drilled in the wood. These rods slowly dissolve whenever the

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The half-spindle and lead-lined doors across the Gothic-style built-in hutch ingeniously echo similar details on the kitchen's wood-paneled walls; together, the pieces help unify the look of the room. The hutch's upper shelves hold dinnerware, while down-low shelves provide room for cooking and cleaning supplies, such as flour and large serving pieces.

clever cabinetry solution that would allow for the island to be used as a prep and serving area in the new layout, but even when the kitchen was reduced to the max, finding enough space for one was a challenge. Bentley and cabinetworker Chuck Fischer, of Whapping, New Jersey, devised a clever cabinetry solution that would allow for the island to be used as a prep and serving area in the new layout, but even when the kitchen was reduced to the max, finding enough space for one was a challenge. Bentley and cabinetworker Chuck Fischer, of Whapping, New Jersey, devised a

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Cabinet Decision

A built-in hutch provides ample storage and a traditional look

BY NANCY STEEDMAN

T

he two goals set by Theresa and Christopher Cook for the renovation of the kitchen at their newly purchased 1941 Colonial-style home in Madison, New Jersey, soon changed. Theresa, an accomplished cook, wanted an open-up and combine the compact work and pantry spaces that made up the antiquated layout, to make food preparation easier. And because the mid-Century, an insurance broker, here to renovate, they wanted the room to impart a "feeling of tradition and formality," as Theresa says, that would harmonize with the rest of the house. Following up on the referral of a friend, they turned to local architect Nick Shandley, from Morristown, who had completed a number of houses in that area and was known to be especially sensitive to cabinetry and millwork—the two hallmarks of the kind of elegant taste they had in mind.

Theresa hoped to include an island for food prep and serving in the new layout, but even when the kitchen was reduced to the max, finding enough space for one was a challenge. Bentley and cabinetworker Chuck Fischer, of Whapping, New Jersey, devised a



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Theresa and Christopher Goad's hatch always has a spot with the wooden surfaces painted in Kite's Milk Paint. The formula preferred by exteriorлагер the same one Christopher Blackhoff uses at his firm Jersey Paint Co. likes the way its rustic finish adds an aged look to new furniture with a few easy strokes. Milk paint is made out of lime, clay, earth pigments, and, of course, milk protein, which has an bonding agents, helping the paint adhere securely to the wood. The lime comes in powder form, in which Blackhoff adds water until it's the consistency of off-the-shelf paint, typically a ratio of one part.

Blackhoff prepairs the paper places with 100-grit sandpaper, then he removes all loose ends of Lexington Glue with paint with a 20-mesh China-bristle brush (1), allowing 24 hours of drying time after each application. He then applies a second sanding with 220-grit paper followed, then a coat of vinyl sealant. Next, Blackhoff takes a sponge brush to apply an off-white black glazing liquid (2), which protects the wood's temperature, enhancing the depth and tone of the paint to prevent the glass from compressing the paint, he then applies it down with a latex rug sponge to paint (3). Since the glaze doesn't dry to a hard finish, he protected it with another coat of vinyl sealant. Finally, after allowing the glaze and sealant to work overnight, he applied a clear polyurethane varnish (4) to protect against water stains and the oil and grease spills that are inevitable in kitchens, especially ones as busy as Theresa Goad's. —DAN DICKLER

and toward the rag kitchen cabinet's extreme the look of timeworn, the hatch is making a comeback—as a built-in. Constructed by a cabinetmaker and attached to the wall, such a piece is more durable than freestanding counterparts, which allows it to be built in. It also tends to echo or match other cabinetry elements and thus lend a sense of unity to a room, while adding variety and visual interest. Both can emerge from space-saving two-object models that closely resemble their built-in counterparts well systems like the popular and simple cabinet that Theresa Goad's "polar and joy."

Blackhoff designed Theresa's hatch as three bays, each finished with beadboard. The central section, with closed cabinets above and below a mahogany-stained cabinet, measures 42 inches wide by 87 1/2 high by 18 deep. The side bays, fitted with leaded-glass doors on top, are each 27 inches wide by 80 high and 12 inches deep. "The depth difference adds the glam without the hatch's massive size and prevent it from overpowering the room," says Theresa.

The hatch was built as an independent unit—three upper and three lower—in Blackhoff's cabinet shop. One inch thick frame-and-panel doors, some accented with thin quarter-round moldings and others with leaded glass, and drawer boxes built to principles of dovetail construction follow time-honored patterns. The interiors of the cabinets are equally well thought out. Shelves grouped along the length near the back edge surface plates stand on end for display. "I give the hatch an antique look," Blackhoff applied raw stains of green oak print (see "Milk Paint," left), a finish popular in colonial times, down a solid depth so it looks black glass-on-top. The effect evokes the hand-painted look of the past itself. "With milk paint, you can see the brush strokes," says Christopher Blackhoff.

Once the stain was ready, Blackhoff dove down to the core of his work, then screwed them all well aside and to each other. Leveling and stabilizing the assembly required 26 adjustable feet on the base pieces. Blackhoff had these with beadboard molding and furniture feet, instead of web-mounted toefits.

The fine woodwork not only allows for plenty of storage and easy passage around the island but also neatly maintains the look and feel of Theresa's culinary space. Now, she says, when party guests wander into the kitchen to see what's going on, "I don't mind anymore, because the room looks so good." ■



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TALKING SHOP

Everyone knows that a car, whether new or old, can lighten the load and speed the work of, say, moving fragile bags from car trunk to shed, or hauling brick at a job site. But for The Old Moke micro-producer Russ Meador, such wheeled assistance is not just a helpful option but a necessity. "Cars are crucial protection for both your property and your health," he says. He avoids damage to grass, floor—and back—with a push and a pull.

The most important attribute to consider before buying a cart is balance, a function of handle length and wheel placement. A cart with wheels too far forward puts more weight at the driver's hands and is more difficult to lift from one side with wheels at the center of the load. Long handles on a self-balancing model make it easier for a tall person to maneuver a heavy load, but will leave a shorter person struggling to lift it high enough. Given the wide differences between models, Russ recommends a test drive before buying. "Load up the cart and wheel it around before you buy the checklist," he says. "As with a pair of shoes, you have to try it on first."



Carry On
BY CLAYTON DEKOMBE

The Log Carters Preferred Utility has a capacity of 200 pounds, which means it's able to fit inside a 10-foot diameter wheelbarrow. It's rugged enough to haul a 100-pound log or unenclosed panel on and off the back-floor stage. And because it measures only 180 inches wide, this cart can fit through standard doorways.



PHOTOGRAPH BY ERIC RANK

A motorized alternative lifting and pushing. Propelled by a 6-horsepower gas engine with four forward speeds and a reverse, this DR Powerwagon hauls up to 800 pounds of building and home-improvement supplies on a removable access board that also carries 100-plus loads. Measuring eight feet wide with grip handles, sheer and power line carts.

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burn-off. The fact is, not one leading conventional 10W-30 could pass all these tests. But then again, there's nothing conventional about Castrol Syntec. Its unique synthetic formula is designed to hold up under conditions as strenuous as these tests. As well as in your engine.

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TALKING SHOP



"Think of a wheelbarrow as a small dump truck," says Russ Miers, who uses his single-axle model to manage massive garden areas. "Good levers between over-the-front wheel stabilize this [armchair] when tipping not in use." Its 10-horsepower motor can move the 10-ton-area weight, and the 10-inch-deep coarse-textured tray evenly fine-sifted soil with next-to-no noise.



A hand truck can move heavy 80-lb. rockers (refrigerator or tree), Weisert's Caster Action model can move up to 1000 lb. carts or ice 10-ton refrigerators three feet in per second, says well. The aluminum frame, with smaller casters on the front, holds plastic support legs that open turning the hand truck into a sturdy 1000-lb. capacity.



BELL WHEELED

The words "wheel" and "tire," often used interchangeably, refer to different parts of the same assembly. The refers to the circumference of the wheel, which provides a smooth surface to roll on. The tire is the rubber that wraps around the wheel's rim, providing traction and cushioning. Consider these characteristics when choosing tires and wheels.

Dimension: Larger dimensions mean longer service life and less wear and better load distribution and increased load at soft soil. However, larger tires require more space and are more difficult to maneuver.

Tire width: A wider tire spreads the road's load over a larger surface and therefore allows better grip on deep sand or soft soils. This parameter has must be kept in mind as the increased friction will make the soil difficult to move.

Tire construction: Rubber tires provide the best service life and lowest cost per mile, but they are also the least durable. In contrast, steel tires, constructed of metal bands, tend to wear out much faster than rubber tires.

Multipurpose: Many tires are designed for multiple uses, which are categorized by how well the tire performs on each task. For example, tires of a construction site, while sturdy are lighter in weight.

A garden cart just moves large amounts of materials, carrying everything from piles of leaves to reconstituted landscaping. With its 20-inches diameter wheels on an aluminum alloy cart, the Miller Bros. Cart weighs only 30 pounds, but the 7-cubic foot polyethylene cart can transport up to 400 pounds—or 1000 with optional 4-wheel stabilizers.



Reported by Jordan Reed

Source: www.ajr.com — See directory — Page 102

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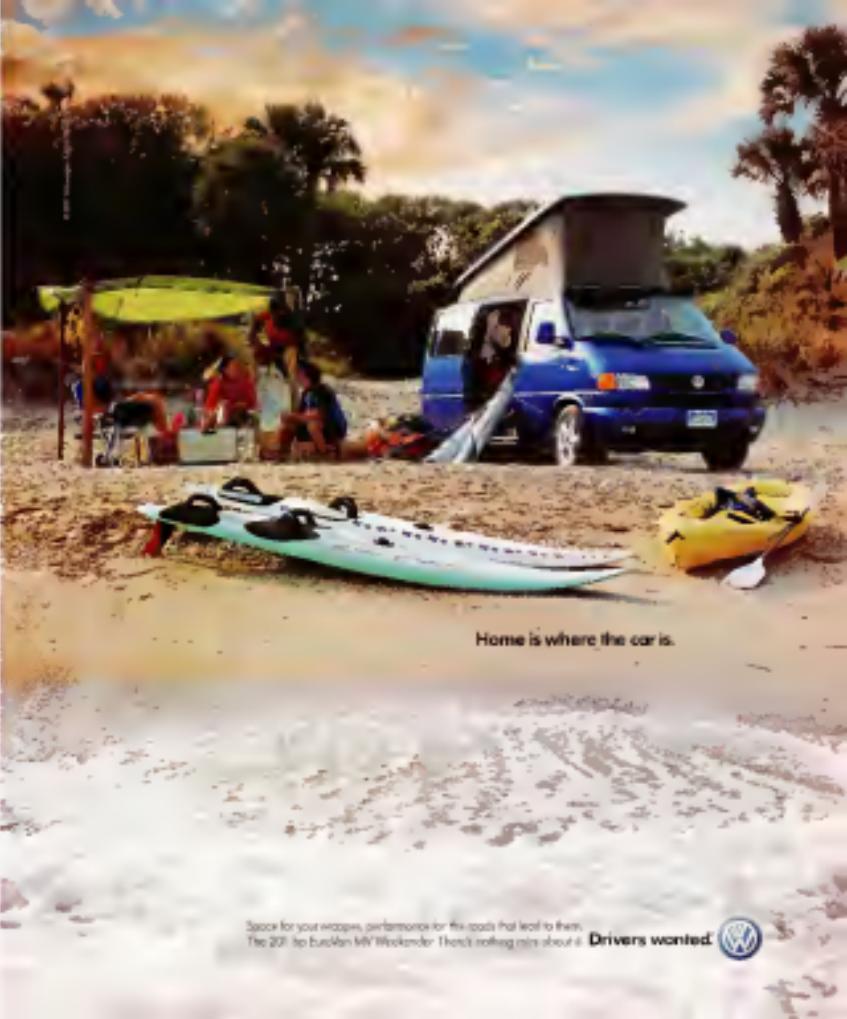
Holding Patterns

Examine your mortgage escrow account closely to be sure you're not over- or underpaying.

Until a decade ago, Florida homeowners had little reason to be suspicious of SunTrust Mortgage Inc. The company had a 300-year-plus lending history and was a favorite in dozens of communities in the state. But despite the bank's stellar record, in the early 1990s some clients began to trouble SunTrust's customers. The escrow reflected on their monthly mortgage coupons was making their payments painfully steep.

Almost every mortgage includes an escrow provision—a monthly amount homeowners are required to pay the bank as an advance on property taxes, homeowner's insurance, and sometimes flood and mortgage insurance as well. (This is different from the escrow arrangements made during the sale of a house, where the down payment and documents related to the home's sale are held by an escrow officer, a neutral third party.) Lenders prorate by calculating monthly escrow payments so that there's enough money in reserve to cover taxes and insurance for a couple of months. Apparently, SunTrust was prorating these costs higher, and other lenders were too—more likely in order to meet their earlier and more aggressive projections. Some banks apparently bilked the annual inflation rate into their calculations and insurance projections with rates as much as 20 percent—or a time when the actual inflation rate was only 3 percent. As a result, many customers were paying upwards of \$1,000

BY KAREN CHENEY ILLUSTRATION BY P. J. LOUGHREAN



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a year more in escrow than were needed to pay their taxes and insurance costs. "We've found instances where funds were sitting there...and there's no escrow," says attorney John W. Shorbaugh, of Mobile, Alabama, who has handled escrow-related class-action suits in many states.

For example, after an investigation by Florida Attorney General Bob Butterworth, SunTrust agreed on "Without advancing wrongdoing, in 1996 the mortgage company refunded 40,000 homeowners about \$2.1 million in savings funds and interest."

Since then, because of the SunTrust case and dozens of others around the country, the U.S. Department of Housing and Urban Development has issued rules forcing lenders to do no more than a one-month cushion in a homeowner's escrow account—an amount most of them do require. A few mortgage companies, however, ask for only a one-month cushion at most at all.

HOW MORTGAGES ARE MADE

The new regulations have helped reduce overcharges, but that doesn't mean people should assume that their escrow bills are accurate. Errors in these accounts will crop up, mostly as a result of undercollections, and these days they most often result in underpayment of escrow. When this happens, it can be an income-reducing and pain-producing mistake for a homeowner, who may suddenly

OPTING OUT

MORE THAN 70 percent of mortgages require escrow payments, according to the Mortgage Bankers Association of America. For instance, if a Federal Housing Administration loan or Veterans Administration loan includes escrow provisions.

Most lenders stand by paying property taxes and insurance themselves to avoid the risk that the borrower may forget. Besides, many people prefer to spread their tax and insurance costs out over 12 months rather than send one or two big checks every year.

However, for homeowners who do negotiate terms that don't require escrow, it's worth considering this option first, not all lenders pay interest on escrowed money. Check first at states where lenders must pay interest, see the Web site of the Mortgage Bankers Association of America (www.mba.org). Homeowners who opt out of escrow have the chance to stash their funds—every month is a savings account for money market fund and even savings bonds (2 to 3 percent APR).

What's more, by making their own tax and insurance payments, homeowners have more flexibility in managing their finances, says Vickie Adams, a certified financial planner in White Plains, New York. For instance, homeowners who make sense to pay extra per year property taxes to gain a higher income-tax deduction in the current year—either now, or by giving to the stock market.

And some people see it as added entitlement to pass up escrow and pay taxes themselves. "The shock of having to cough up a check every spring and actually pay close attention to where that money is going is good for me," says Peter Vandenplas, a therapist in Herndon, Virginia. "The sense of savings over tax increases should not be diluted through disintermediation."

be faced with a whopping late payment to make.

It doesn't take an advanced accounting degree to double-check a lender's numbers. By adding up annual property taxes and insurance and dividing by 12, you can figure out what the monthly escrow amount should be each month. Then, check with the bank or read the mortgage agreement to determine whether the lender requires one or two extra escrow payments in a calendar year, because that additional amount over a year, and add it to the base monthly figure.

Mortgage experts say that homeowners should be particularly vigilant when they receive notification that their mortgage has been sold from one lender to another—in frequent occurrence these days. If data is never correctly passed along to the new owner, it's possible that an escrow account may not be analyzed and updated the year. "Sometimes loans skip between the cracks," says David Gaudet, author of *The Homeowner's Resource Kit* and president of Lucas Tech, a mortgage software company that also audits escrow fees.

A significant shortage can develop in an escrow account over time, as taxes and insurance increase but the monthly escrow bill fails to keep pace. Most lenders perform an annual savings analysis, which is sent to homeowners, that calculates whether there is enough money in the escrow account to cover taxes and insurance. At that point, it's likely that a bank will realize any mistake. Whether the error is caught then or later, the lender will ask the borrower to come up with the shortfall, which could amount to thousands of dollars, says Gaudet. If the underpayment is greater than one monthly escrow payment, the lender is required to spread out the payment over the next 12 months. But if it's less than one payment, it has to be covered within 30 days.

WHO'S AT FAULT?

Similar mix-ups can occur when homeowners refinance a mortgage, particularly if the loan closes around the time taxes are due. "There could be confusion over whether your old lender or your new one is going to make the payment," says Scott Blaser, vice president of escrow operations at GMAC Mortgage in West Des Moines, Iowa. To be safe, Blaser advises, you should check a few months after refinancing to make sure that escrow accounts and tax payments are up to date.

If it's anyone but the bank or plenty computer software for escrow automation, but frequently it's the homeowner's fault for not telling the lender about improvements made to the home. As there is no value of a property, they can trigger increases in taxes and insurance premiums that require higher escrow payments.

Even professionals can overlook the importance of keeping the bank informed. Recently, Boca Raton's Vickie Adams, manager of a Weston real estate office at Jinkins, Pennsylvania, made arrangements to buy her house and decided to bump up her insurance to cover the new value of her property. But when Blaser got his escrow analysis six months later, he found that the amount was short \$700, because the monthly escrow charges had not been increased to reflect the higher premium. She had no recourse to make up the difference. "What I should have done was notify the lender right away so that I wouldn't have been paying escrow fees based on the old policy," says Blaser.

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APPENDIX B: SAFETY NOTE

Custom-built homes can present the same kind of problem. When such a house is under construction, the property taxes are typically based on the raw land. But once the house is completed, taxes increase substantially, while the tax-exempt payments can remain the same because they're tied to the old taxes. As with improvements, it's up to the homeowner or tell the lender to adjust the excess to match the **assessed value increase**.

Real estate experts recommend that people who know that their tax-free bill is longer than it should be consider making voluntary contributions to avoid a statement of flat account—but a word to

lender recalculates the escrow bill correctly. "But as he uses your address on the escrow statement—or let your lender know by phone, if your payment's made electronically—that the money is intended for escrow," warns Victor Veldt, director of the Mortgage Bankers Association of America in Washington, D.C. "Otherwise, it goes to principal by default."

The lesson: Don't turn a blind eye when others are making poor money management choices or misusing analysis in a driveway—wherever you are, in the garage—and forget it, says Gersbach. But as with all bank accounts, privacy can lead to bigger. A few minutes spent reviewing your account can save tens of thousands of financial headaches.

MONEYCLIP

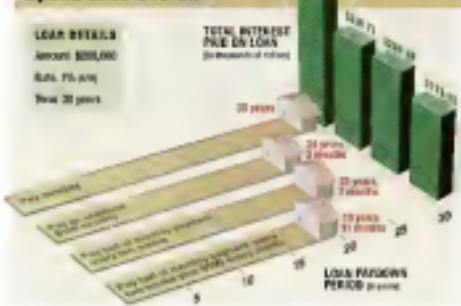
WAYS TO SAVE ON MORTGAGE INTEREST

For most people, the biggest impetus behind joining the reverse refinancing craze was to lower monthly payments; but equally enticing was the opportunity to reduce total interest paid over the life of a mortgage loan. Depending on your current rate, however, merely paying off all more recent against principal could save you as much as shaving a point or two off your interest rate—without incurring refinancing closing costs.

"By signing up on consolidated payment programs, you can start saving savings right off the bat," says Brad Greenman, Vice-Vice Home Mortgage marketing representative. Many lenders offer flexible fee schedules that let homeowners replace their regular monthly payments with half-daily payments, or sometimes a slightly larger payment, every two weeks. Figure out over a full year, it adds up to the equivalent of at least \$2,400 in monthly payments instead of \$1,200. The extra money is credited to the loan's principal. These money-saver types of programs may pay interest only if a dollar you don't pay interest on, you pay less interest overall—and the mortgage is reduced sooner.

Response A homeowner has a \$200,000, 20-year mortgage at 7 percent. His payment would be \$1,200.00 a month, or \$14,400.00 a year. Over the life of the loan, he'd pay a total of \$137,700 in interest. If, instead, he made the lender one-half of the monthly payment—\$600.00—every two weeks, the amount he would pay each year becomes \$14,400.00, but the loan payment period decreases by almost six and half years, saving nearly \$50,000 in interest. By switching an additional \$1,000 a month to principal, the homeowner could shave another four and a half years off his loan.

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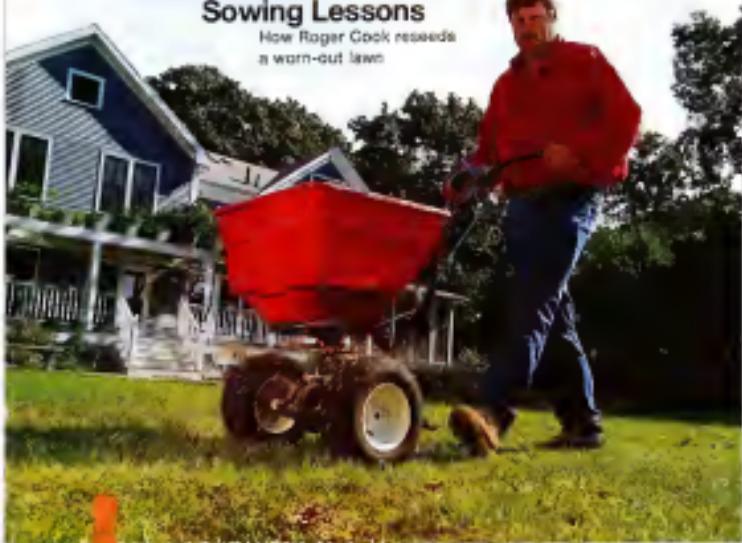
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Sowing Lessons

How Roger Cook rescues a worn-out lawn



It's been said that grass grows by inches and is killed by feet. Melody knows this better than The Old Mowin' Man, sowing conservation Roger Cook. "Pens, lawns, weeds, not enough nor at once—that are lots of reasons for bad spots on a lawn, and I swear every yard has some," he says. Roger's regimen for rescuing the grass is as sound as it gets: a five-step process that involves digging old grass, scarifying the soil, adding a shallow layer of lime, spreading new seed, and, finally, watering.

Downeasting has changed in the yard of a church Bienville over time. Roger started a mix of perennial cool-season grasses and then sowed it into an up-and-downs leaf rake. He explains that the soil needs moisture and mild temperatures to start growing. "Grass germinates best when the sun isn't hot and dryish," he says. Rested in the height of summer and the grass beat its compost-

with more aggressive weeds for light, water, and nutrients. ("You can grow a great crop of emulsions in June," he says.) Raised clumps in winter and the temperature can drop so low for the seed to germinate or for tender sprouts to recover, and lawn may wish swap the seeds or leave them so overwhelmed that they don't

As Roger finishes up the job by giving the newly sown patch a gentle spackling with the garden hose, he says, "Reseeding that at the till gives those homeowners from having to look at an ugly yard next summer." Within a week or two, new grass sprouts will be poking up from the dirt. And mere months, provided there's ample water and sunlight, the lawn will begin back to its owners' much-beaten track: locking off their sheets and letting the soft, wavy blades tickle them first. "It'll be nice for croquet and bocceball," says Roger. "But leave the horseshoe set in the garage."

BY ERICA SABERRE PHOTOGRAPHS BY RICHARD GLINNED



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3) The seedling: Germination of seed with a rhythmic, nonstop rotation of leaves. Roger-Brundage's research group has made a remarkable discovery that can affect your entire season! Starting in one direction, the leaves may rotate until they are unable to continue with enough energy to make the stalk reach its maximum height or a spike appear—but not both. He suggests dividing the amount of seed from which the package says you must sow into two equal portions, instead of 4, or 1,000 square feet of lawn. "Don't worry about waste," he advises. "There is no waste in sowing."

4) Using a plasticized rato with its knapsackинг set, Roger isolates the seed in the loam by gently sifting in one direction, then pushing in the other sifting-sand not to dig deeply. "When I see more soil than seed, I'm ready to begin in the ridge." The ample rainfall causes ridges to be pushed up like a mountain. He collects just one pass over the area, firmly settling the sand in the soil without breaking it like sand or ammonium fertilizer will.

Q Using a trowel, Roger gently spreads the newly sown area. "In the heat of summer months, soil warms up established lawns in as little as a week," he says. "But when you first播下, you only need enough water to moisten the seed so it can germinate." He will continue to water lightly once or twice a day, depending on the weather. Once the top ½ inch of soil has truly germinated, once the grass begins to sprout and grow, Roger will wait until late June or mid-July to mow it. He'll then move the blade on his riding lawnmower to a sharp 1½ inches, which is ideal for new grass as well.

A person in an orange shirt is spraying a lawn with a hose. The spray is visible as a white mist against the green grass.



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GETTING GREEN

"A small amount of thatch—the roots, dried clippings, and debris—around the base of each blade of grass—provides great root, but a layer of more than 1/4 inch prevents thatch from taking hold," says Braden. "It's like thatch tilling. It tills into the ground, so the engine that's being moved puts away the dead grass." He says, "The soil tiller tool is available for just \$10 to \$100, which is a great investment because there's no cost to the ground with a tool like this. What we do is till the surface before it's time to mow, so that's in early spring to early summer for the lawn because that's what you'll find the most dead litter to be removed," he says.

A WALK IN THE PARK

"No-motor reflexes call compassion that stickers off grass in mats, letting it dry up and water," Roger explains. "It's one of the best things you can do for a lawn before mowing." Unless you need the workload you get using a manual scythe, a mechanical one saves off time and beats the usage, below, when you push from under dirt, being in front of to take railroad planks of soil in its way. Working behind the machine is the best way, Roger says. "It wouldn't bother me if it's just a single patch of soil, but a thousand feet isn't something?" Pushing in front, he continues, the 100-pound weight on his back, pushes a solid roller at the front, demonstrating how easy it is to operate the machine, which rents for \$60-a-day. "You don't have to lift it; it's easier to do this," he says.

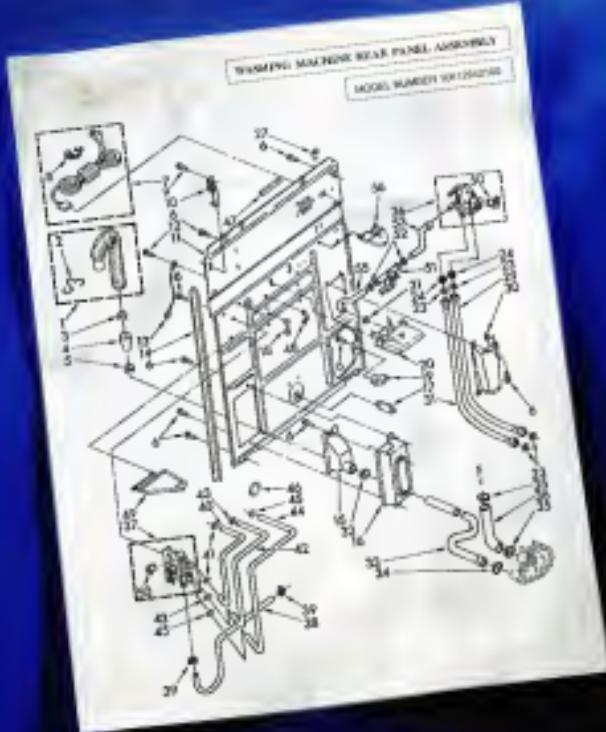


HOLISTIC GARDEN

[i] Looking over an acre of browned sago palm in another site that was sealed in the spring, Roger explains, "We wait for ten days, watching all the plant move." The new heat doesn't require labor, so he prepares to pour a granular mix into the hopper of a sago seeder. The mechanical device costs \$800 a day and eliminates the metabolizing, breaking down, untangling stages of raking. Then by using the tank for a large area, it evenly distributes seed down individual plants or where suspended there, sharp metal discs (seeds) that cut through grass in the ground. Furthermore, the machine can handle areas of the lawn that are usually in parallel squares (clippings). When the seeds are sown, the sago seeder and sower perpendiculars look like pinwheels. As the plants develop, there will be areas of all sorts.



WHAT'S NEW IN LAWN CARE • PAGE 145



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Working Weekends

Homeowners redo a 19th-century farmhouse in their spare time

With its weathered-brown siding, concrete-floor floor joists, and decayed beams, the small farmhouse at Columbia County, New York, seemed to have little going for it—other than an easy, two-hour drive downstate from New York City. In fact, when their mother-in-law showed them the place, Howard Donahue and Mark Fisher almost ran off in sheer shock and left for good. Mark's painfully banging his head on the low, sloped ceiling of the garage or kitchen didn't help. "We drove away thinking we wouldn't be back," says Howard.

Upon reflection, though, the men found that the place did possess a certain charm. Even though neither of them had lived in or worked on an antique wooden house, both were dead set on renovating one, and this little house dated to 1850. The 1,640-square-foot structure was situated on a quiet country road that weaves through open fields. It had two bedrooms and bathrooms, a workable though outdated kitchen, and a ground-floor game room/library that Howard, a psychiatrist who enjoys painting, could turn into an art studio. Mark, who is the director at the conservatory of the Brooklyn Botanic



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Gardens in New York City, who worked at least an acre to landscape, and the property offered him exactly that.

The dredging fees, though, both inland, were the price. A local lawyer believed that the sellers might settle for less than the asking price of \$115,000. "You're the only buyers around," he confided as they played a bid on the new \$100,000, and it was accepted. "What we didn't know," Howard adds, "is that we'd end up spending twice as much as we expected on the renovations"—which included building a wing and adding a porch.

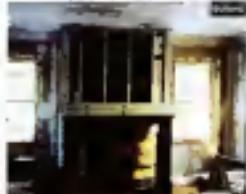
At the time they closed on the house in October 1993, Howard and Mark had budgeted just enough to cover the repairs that the pre-purchase inspection revealed to be urgent, including upgrading the 60-amp electrical system to 200 amps ("When the bridge went on, the lights dimmed," Mark recalls) and replacing the unsafe oil-burning furnace.

After the work was completed, the men rolled up their sleeves and set to work. First, they focused on indoor projects: replacing cracked drywall panels, stripping wallpaper, and pulling up the carpeting—which revealed wide, heavy-bristled pine

floorboards throughout the house. They also patched plaster walls and painted most of the rooms in the house a warm yellow-beige.

As the men became more involved in their project, "we realized how much we'd enjoyed getting our hands dirty," Howard says. They also came to understand that what they really longed for was a space bigger than their 100-square-foot combined living-and-dining room in which to entertain. A 16-by-28-foot one-room addition, they figured, would give them that—and, if they built in an off-the-old-kitchen addition, they might be able to address the back-to-back storage issue when they prepared for demolition.

Because they had such a clear vision of what they wanted, Mark and Howard hoped they could forge an architect's fees and work directly with a builder. Their wish was fulfilled in the person of Ed Klaeger, of Chappaqua, New York. Although he calls himself a carpenter, Klaeger also builds and renovates complete houses. After looking over a form-cast mock-up of the addition that Mark—who's built models since he was a boy—had constructed, Klaeger spoke the words that caused the men to hire



The fireplace hearth extends into the addition. To conceal it, plastering above the fireplace area faced with whitewashed and painted.

him on the spot. "I don't see why we can't do that."

Even Klaeger outlined what work he would undertake with his crew. The major order of business was to excavate for the addition and remove various obstacles: a concrete base under a chandelier and a similar one that ran along the front of the house (see "Forces Prevail," page 82), plus a small extension off the kitchen and a shed. The crew also leveled a section of earth off the addition for a planned pass.

Then, Klaeger set about adapting Mark's form-one model; in doing so, he managed to address several seemingly conflicting objectives. The men wanted the addition to be level with the existing home, without stepping up or down into it. At the same time, they asked that its ceiling be one foot higher than the 8-footers in the kitchen it would adjoin. Lastly, they requested a secondary firewing section, or gable, the profile of gables in common use by others with multiple additions. Klaeger fulfilled their wishes by giving the new room a higher roof, then adding a "crown," a gaudily slanting roof bridge that connects it to the older portion of the house. To steady the roof, he did all in reinforced asphalt shingles. He also ventilated the old one with soffit vents and insulated it, to prevent ice dams.

Once the addition was closed in and the roof got on, the homeowners, with expert advice from Klaeger, designed the interior to reflect a formal sensibility, with 13-over-12 windows facing in three directions, bookcases built into the wall seg-



With its 13-over-12 windows, this room looks out onto Central Park. The original fireplace was removed and replaced with a marble one.

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A MAREN CLARK

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among the trees from the kitchen, a side new brick lined fireplace surrounded by a 1790s Federal mantel on the opposite wall. These refined elements complement the simple, clapboard exterior.

As work progressed, the crew took on many money-saving tasks as they could, such as priming and painting; the clapboards, sealing and finishing wood floors; stripping paint off the mitered, and applying brick sealer to the brickwork. "Each weekend we'd ask Ed what we could do to help," explains Howard. "Oftentimes, we stayed out of his way." The partnership meant that Klinger would stop by most Saturdays to discuss the previous week's progress, outline what the week to come would accomplish, then explain what he thought the crew could handle over that weekend.

Despite everyone's best intentions, the project ran over budget, due to extra work the homeowners decided to have done. Big-ticket items included removing existing structures, re-facing the back of the house with new clapboard, and addressing the backyard drainage problem. To improve the drainage, Klinger buried 4 inch perforated PVC piping along the foundation at back of the house; the pipe diverts water to a swale on the far side of the property.

Even with the addition complete and the overall master resolved, a colleague of Mark's advised him to wait another year before starting work on the garage and gardens, "to let the soil settle." The excavation for the addition had interrupted building foundations and

FRONT PIECE

One striking point for Howard, Christopher and Mark Pfeifer was whether to remove the profile on the facade of their home or leave it.

Mark's wife, Kristin, suggested that the retaining structure be replaced—the modernized garage under the old entrance. But Christopher/Mark's son Ed Klinger felt that the existing structure's exposed—yet ugly—concrete foundation had been painted right up against the wall of the garage, if so, it might have trapped moisture behind it, rotting out a screen siding and the left plate. If the rear were willing to invest in a renovation, Klinger said, he'd replace the utility lines in the garage with two separate hard-wired electrical feed.

Before removing the old columns and railings, Klinger broached the roof with two flat timbers; luckily, demolition of the concrete base and steps prevented no damage to the house; the partition roof, too, was in good shape. So Klinger dug holes for plastic trailers, tilted them with construction tubes, and filled the tubes with concrete to create support piles for the new, remodeled entrance. He repeated the process along the front entrance side, then framed out the floor of the porch in pressure-treated wood, added steps, and laid the hard driveway. Klinger lowered the entrance in size and set them in place, then he built and installed the benches, an herb garden. Two coats of paint completed the job (picture, page 56).



Right: Old-timey garage in style—but with a modern twist. Below: A man working on a porch.

shale coursing, which would reinforce the design. Besides, deer-distressed and distressed plantings made the property look "starry," says Mark, the homeowner. So the team ripped out a number of live-level-high plants that were crowding one side of the house, as well as other legacy plantings, also described as somewhat backyard intruders per.

When Howard suggested that Mark "think of the garden as extending from the woods and flowing down to the house," the project started to bloom. The men chose bluestone to pave the path, so that the new entrance (30 square feet and a designed to extend some 14 feet beyond the side of the house to take advantage of the view of nearby hills. Local landscape architect Matt Tonich provided the plan for laying out pavers. Designed as an impervious example with a curved water edge, it accommodates the contour of the garden it abuts.

The homeowners hand-picked the stones at a local building supply store and had them trucked to the house, along with 10 yards of gravel, stone dust, and a landscape cloth. They then walked them on their edges, one by one, up to the patio site. One hot weekend in May, they spent seven hours laying the pavers over and laid down the landscape cloth, which would prevent the layer of stone dust on top of it from trickling onto the gravel. Using a rented tamper, they compacted the first layer of stone dust, then applied a second, which they left uncompact. Following these slabs, the men laid out the pavers, including the ones with curved edges that had been shaped by a mason, and, finally, instead on a final layer of stone dust to fill the cracks between them. From start to finish, the job took four weekends.

When summer came, Mark and Howard finally found time to talk stain-resistant chairs and apply the stains of their choice. Of course, the hill didn't last. Mark is already planning what to plant on some materials he brought for the new path. ■



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HOMEOWNER'S STEP-BY-STEP PROJECT SERIES HANDBOOK

HANGING CLAPBOARD SIDING



Tom Glave puts the finishing touches on the siding job by nailing up the final board over the last course of prepared cedar-clapboard. Secure scaffolding or a ladder is a must for this type of work.

BY CHARLES WARDELL

Since colonial times, Americans have protected their houses from the weather with thin, overlapping wood planks known as clapboards. This siding, which got its name from the Dutch word *klapboen*, “to split,” was originally made again from logs of white pine, hemlock, spruce or cypress. Later, saws did the work, turning out miles of delicate, tapered strips less than an inch thick.

Today, clapboard siding comes in a variety of woods, widths, and lengths, as well as in such man-made materials as fiber-cement. But as far as This Old House general contractor Tom Glave is concerned, western red cedar is still the best choice for the money. “It takes paint easily, goes up faster than shingles, and as long as it’s installed properly and well maintained it can last the lifetime of the house,” Tom says. “It looks great, too.”

Choosing a good material is just the first step, however. A long-lasting siding job requires tedious prep work before any board is nailed up. And a green-looking job demands careful alignment of the butts, the clapboard’s thick lower edges. Tom lines them up with the top and bottom edges of the window trim, and with the courses on adjacent walls. “You can adjust the spacing between the butts up or down as much as ½ inch to make them level where they meet,” Tom says. “As long as you make the adjustments gradual, nobody will notice.” Then the siding will appear perfect, even if the house isn’t.

—Leslie Mowbray

PHOTOGRAPHS BY DAVID GARMACK



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A variety of wood species can be milled into beveled clapboard siding, and now there are unbewelved planks molded out of fiber-cement that can be hung in much the same manner as wood. Yet given his choices, Tom Givens prefers to use clapboards made of western red cedar. "It's lightweight and durable, and it holds paint and stains better than other products," he says.

Materials

Materials Cedar clapboards come in various grades and in widths from 4 to 12 inches. Tom almost always chooses 6-inch-wide stock made from clear (knotted-free), vertical-grain (*quater-sawn*) lumber, a grade known by the acronym CAV. These narrow, quarter-sawn boards expand and contract less than boards with a "flat" grain. He orders them primed so "the back of the board gets an added layer of protection against moisture." Tom is no less particular about the nails he uses. Only stainless steel ring-shank will do. Galvanized nails may eventually rust, causing them to react with cedar and stain the wood.

"Throw away the level and align the boards with the house's existing trim."

-TOM SILVA

Tools & Materials



- a. **Millimeter's soft (18-pound), 52-in-wide netils** for protecting shrublings when soil removal results the water-table, corner bonds, and the tops and sides of windows and stone embankments.
 - b. **Millimeter's soft 6-ft-wide netils** for covering the top of the water-table in elevation changes. Choices include treated or untreated materials.
 - c. **Metal meshing** for covering the top edge of the water-table in elevation changes. Choices include treated or untreated materials.
 - d. **Metaplastic-coated rebar** for protecting the tops of embankments from erosion.
 - e. **Spun fabric** for covering the top of the water-table for marking high spots and making dikes.
 - f. **Primed CWD** net or earthen sheeting for protecting walls from the weather.
 - g. **Chekfix** filter for permeating coarse sand for finding an eroding plume in sand foundations.
 - h. **Stainless steel ring-slab needle (M4 and T4P)** for finding an eroding plume in sand foundations.
 - i. **Wastepac** (polypropylene) for sealing.
 - j. **Utility knife** for notching coirsoil and cutting tall meshing until waterproofing membranes.
 - k. **Hammer** and **sand tamper** for installing geotextiles to keep them flat (tensioned). (staple gun)
 - l. **Coat gun (with potassium, ammonium sulfide)** especially for sealing ends of displaced air-cushions, hoses, and storm drains.

-10111111



ENTER A DRAWING NUMBER ON THE BACK

- * If measurements and lists have already been recorded, copy 12-thru-16th entries of both behind the current section and the side margins next to charts and schedules. If there is no measurement or list, see "Placing Above" (page 16).

- *Locate studs by tapping across the wall with a hammer and listening for dull chuff. Using a chalk line, snap-snap from the top to the bottom of the wall at each stud location, typically every 18 or 24 inches.
 - *Blend feathering of the top snap-off of the water board (pen boardline), run along it at least 1 foot inwards Up the wall. Secure the top edge of the bonding at the stud with 4d nails. Overlap the ends of the furring 3 inches, and nail joints with a pencil. (Right-angle corner supports, made 1/2-inch boulders fit below the return studs so it covers the bonding.

- *Slosh tape 2-inches-wide strips over each stud line (above). This creates a breathing space and provides an escape route for any condensation that might form behind the sheathing.



SEE ALSO: NAME THE FEDERAL GOVERNMENT

- *Using a little saw, rip 18 to 24 inches off the tail of a cleatboard to make a starboard rail. Saw or plane up its thick end edge-side to 1 inch above the water table and secure it at every other stud location with one 7/16 nail.
 - *Line up the starboard lower edge—or bulk edge—of the first rail whilst cleatboard is still it's oldest, the starboard ship and line a hair above the water table. This is the starboard gunwale. Depress a few bends of stainless wire underneath each end and corner board, bend and plane ends below it. Lower each end about 1/8 inch off any other rail corner board to allow for wood expansion. At each stud location, about an inch above the string-on bulk edge, drive one 7d nail with the sash-cock of the chiselboard.

- 12** If displaced isn't long enough to span a nail, split two together with a 45-degree snort joint and a 90° mitre nose joint ('Planning Ahead'); and countersink over a nail (above). Apply sealant to the ends, fit them together, and drive one nail through the overlapping board 1/8in to the side of the joint.



图 3 相机对焦距离与景深

- Cut in the miter corner between the corner baseboard and the window sill and align its (miter) edge with the mitered edge of the sill. If the sill has a hem, align the back edge of the board to fit around it. Bend the ends in so that and nail it up.
 - Hold the sash stool, led to the window-sill area, casing and stile case-mit with the top of the head casing. Swivel the bottom of the mit-out to one side using the inner pivot point. When in place, on the lower part of the stool stick the well up with the butt edge of the nail installed clip-board. Transfer the marks on the stool to the well [and] transfer the marks on the stool to the sash stool as in Step 3. Then transfer these marks to the side molding and remove corner board. Repeat the miting/moldings process on the opposite corner board.
 - Cut, sand, and nail up the sash stool in Step 3, leaving about $\frac{1}{8}$ inch of wood end for the wood to expand.
 - Glue on 3/16-inch-wide pieces of 1x6 prefinished trim molding above the head casing, and extend it 2 inches past the casing on each side of the window.
 - Cut one bend a 3-inch-wide piece of molding over the mitered end of the window casing so that it overhangs the face and edge of the casing by 3/8 inch. Fasten the molding 3/8-inch to the well wall at 45-degrees.



STEP 2: LAY OUT AND MARK THE FOLLOWING COURSES

To ensure that the courses are evenly spaced, make a "wing stick" out of a straight tool at least 8 inches long. Starting at either end, make a series of marks along one edge, each equal to the drywall thickness plus an allowance (e.g., every 4 inches for 8-inch-wide stock). Mark an arrow at the end of this stick where you began measuring [arrow].

On the wall, snap a chalk line even with the window's bottom edge.

Stand the wing stick upright on its arrow-marked end opposite between the window and a corner board. The end should be even with the bottom edge of the starter course [arrow]. If any mark on the stick aligns with the stud line, simply transfer all the marks from the stick to the wall. If none align, pivot the stick in the direction of the marks until one lines up with the stud line [arrow]. Transfer the stick's marks to the wall.

Take a length of drywall as long as the wall is high, depending on the wall, and holding it vertically, line up one end with the butt edge of the starter course. Transfer the marks from the wall to the drywall [arrow].

STEP 3: SAWING ABOVE THE WINDOWS

Prise a starter strip (the scrap piece from Step 2) against the framing and hang the course above the window. Nail about an inch above the butt edge to avoid puncturing the framing. Do not line up any eccentric joints with the edge of the side studs.

To establish spacing for the remaining courses, move the corner boards up to the floor board using the story pole from Step 3 as a guide. Cut and nail drywall up the rest. If there's room, skip the top edge of the last course board if this board doesn't butt the roof. Otherwise, rip the top of the last course to fit flush against the floor's bottom edge and nail the panel with screws. Repeat [Steps 2, 3, and 4] on neighboring walls.

If the windows are at the same height on like other walls, transfer the marks already on the story pole to the corner boards. This way, the butt or eccentric joints will be aligned. But if the window heights differ, follow the engineering process outlined in Step 3.

On grade, nail up 1x3 strips of spruce to the wall alongside the rakes. Then cut the drywall's ends at an angle to fit against the inside edges of these strips. Cover the ends by nailing up 1x3s piece wide enough to cover the edges of spruce and the ends. Nail into both the drywall and the trim.



FOR MANT OF A RAIL

While not as a per with the ridge, placed over fluorinated water or the existence of GFDs, the double-siding controversy has divided experts and employed makers into two opposing camps. Speaking for the manufacturers, Amie Heberlein, executive director of the Western Red Cedar Lumber Association (WRLCA), argues that a cleat should be nailed into a stud with one nail, 1/8 inch up from the board's butt edge. Says Heberlein: "With one nail, the wood can expand and contract freely." He says that if you put a board in place with two nails or one nail, it increases the chance that the wood will split, particularly along the shiplap's top surface.

Tom Alvin, a longtime double-rail user, says he hasn't seen any problems with nailing—if the top rail fails at a courses' ends, then it's assumed by the owners [arrow]. He says—and he enjoys the freedom this technique gives him to adjust the spacing between courses as he needs to, without altering the nailing pattern. He maintains that nailing might be more of a problem if the wood less expensive and more movement-prone kiln-dried or locally graded, instead of CVD stock. And for half-timber siding installations, he suggests following the WRLCA's guidelines. "If you don't have a lot of experience, go with one nail," he says. —David Shultz



PLANNING AHEAD

- To estimate the amount of stock needed for a siding job, measure the height and width of all the walls to get the total square footage of the project [arrow]. Then, deduct the area of all the doors and windows. Take that measurement for the lumber yard, where, based on the width and exposure of the siding you want, they will determine the number of linear feet you need.
- On the job site, position siding so it doesn't get wet before going up.
- Cover walls with 18-inches-on-center 1/2-inch-wide builder's felt. Use asphalt shingles with lower evaporation felt measures or 100% wool 8-lbs. shingles.
- Install trim (jamb, headers, valances and door casings), and start with exterior soffit, if any, after installing fasciaboards.
- Before nailing a course, place a series of shinglefelt underneath the one being set out. If the boards are on opposite edges, otherwise, the cut end of the joint won't be straight.



LETTER FROM THIS OLD HOUSE

Our Home...For Now

BY DAVID AND JANET MAGUE

E

very day we count our blessings. It's been two years since we bought our 1883 Shingle Style house overlooking the harbor at Manchester, Massachusetts, and when we walk around our gardens, we will wonder what we did to deserve the honor of being the caretakers of this incredible property. We don't really think of ourselves as home "owners" so much as temporary caretakers.

We first understood our role at the closing, when we had a choice to see the record of all the prior owners on the title documents. Browsing this century-old catalog, we realized that someday we would be just two more names on the list. It impressed us in our responsibility to leave the place in good shape—one for the next people who live in the house, but for everyone who sees it in its setting. Each of the properties that face the harbor is like a dot in an impressionist painting. Together, they make up an exquisite landscape, a picture that had separated us from the rest. We recognized that any change we made to one part of it would affect the whole, so we needed to approach it with great care.

This 125-year-old building was begging for a renovation that would reclaim some of its former glory as well as update the structure. The house had had three different incarnations: first as a limited example of Shingle Style architecture of the 1880s, then as a prettified Colonial Revival summer retreat for a wealthy family at the start of the 20th century, and finally, in the late 1970s, as a run-down, dilapidated shambles.

As you walked around the house, the logic of the design was hard to figure out. There were pillars in the middle of hallways and half-bays crowding up the staircase. The kitchen, far from being in the heart of the first floor, where we would like to see it, was a dim, isolated room, an artifact of the days when it was used only by servants.

As we lived in the house and studied old photographs, we familiarized ourselves with its history. Eventually we decided that it was time for the Colonial Revival remodel to add porches and decks and turned it into an elegant summer house. We wanted to include some of that style in our version, but the design needed to be simpler and less forced to suit our lifestyle, as well as to pay tribute to the Shingle Style's less ostentatious look.

Our goal was to return the house to its original character, which had been lost in its most recent rebirth, yet we knew we had to approach the project creatively and not strive for a historical reproduction. Replacing beams just for the sake of authenticity is like in design and holds very little appeal for us. On the other hand, allowing the place to evolve, even as we restore it, continues a tradition that started the day it was built. Houses change and grow along with their different residents, our renovation will be another episode in the life of this one.



PHOTOGRAPH BY ROLIN SMITH

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backtracking

Plans for the TV show's new project house restores its finest features from a bygone era **BY JEFFERSON VOLLE**

Check out www.backtrackinghouse.com for more information on the Manchester project, including real-time photos of the renovation in progress. Coming later this month: a 360-degree virtual tour of the house before construction started.



ILLUSTRATIONS BY TIM SLATTERY

david McGuire stands in the front hall of his once grand seaside house in Manchester, Massachusetts, site of the current *This Old House* project, gazing at the open space around him. He's a tall, wiry writer that although he and his wife, Janet, love the house, they are the first to admit it has problems. "You drive up to the glorious property, walk up six steps, through the fabulous, formal front doorway and...you're nowhere. It's a colossal disappointment," he says. Except for an elegant, winding staircase at one end that hints at the house's past magnificence, the entry hall is plain, featureless, and stark. Everything is white, from the bleached maple floor to the ceiling 17 feet above. It feels rather like a large waiting room, without there being anywhere to go. "But we've got great plans to change all that," says David.

An artist's rendering of the finished project, shown here from the back, is very reminiscent of the Beach Colonial Revival summer houses (above, left) that its owners appear to have in mind.

The McGuire's house, originally referred to as the Barn House, was one of three Shingle Style summer houses (the other two were called the Fort House and the River House) situated on neighboring properties overlooking Manchester Harbor. Designed by Boston architect Arthur Little and built in 1888, all three "cottages" were massive structures, wrapped in a rustic cloak of cedar shingles and bulging with turrets, dormers, wide porches, bedrooms, drawing rooms, music rooms, parlors, and servants' quarters. (See "Manchester's Seaside Beauties," page 102.)

By 1991, the Barn House was transformed into a Colonial Revival messian, renamed The Meadow, and festooned with miles of white-painted trim, columns, balustrades, balconies, and arches. But by the 1970s, neglect and brutal waterfront weather had taken

that will be similar to save the same tax—and reduce maintenance and energy costs—a new owner stripped most of its exterior cladding, removed most of the porches, replaced windows with aluminum sliding doors and dormers with skylights, and demolished the large wing on the west side of the house. In the process he reduced the grand manor to a modest ranch box.

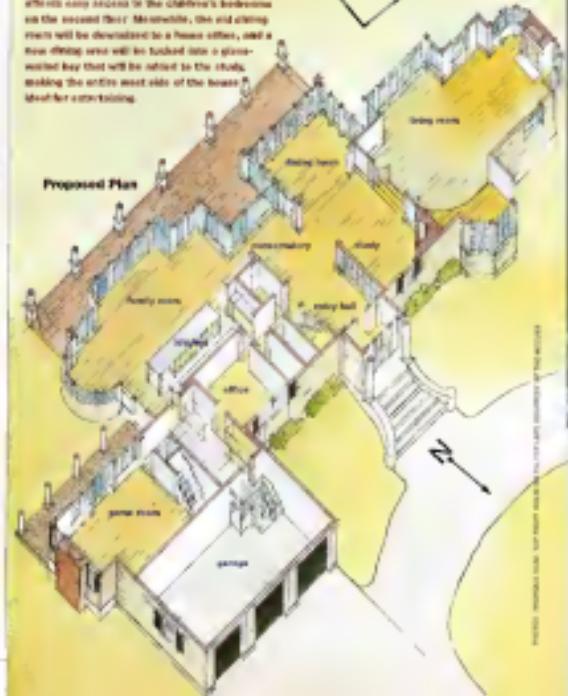
Inside, these major renovations have created a downsize-living wonder of rooms, with cold remnants of old trim work and passageways that wind randomly through walls. "There's no flow," says David. "It's like a maze." The house also seems to be disconnected from its surroundings. So far Jason: "The house has wonderful views on the water, yet from a lot of the first-floor rooms, we can't even get outside."

To correct these shortcomings and restore a sense of the house's original character, local architect Stephen Holt has been working with the couple for 13 months. Holt has more than a passing connection to the McGraws' house. His great grandfather was Oliver T. Roberts, who along with his partner, William Horner, built Jason and David's house, as well as many of the other fine residences of the period. "In the 1880s, Roberts and Horner were the contractors in Manchester," Holt says. Holt's understanding of Shingle houses deepened while at Yale, where he studied under famed architectural historian Vincent Scully, widely regarded as the foremost expert on the style. In an effort to understand all the changes, Holt drew up three sets of "as-built" floor plans, one for each of the house's three levels. "We wanted to understand where it had been so we could tell where we should go with it," says Jason.

The design that David and Jason finally settled on creates much of what was lost in the more recent remodel. A new living room addition, similar in plan and size to the soaring bay wing designed by Ladd, will have a large fireplace flanked by 4-foot-wide bay windows. Diagonally across the room from the fireplace there will be a raised staircase with a raised floor. David, an avid partier who takes road trips, has always worried a single fire has

First floor

The plans developed by homeowners David and Jason McGraw and architect Stephen Holt will return their 110-year-old house to grandeur and put back some of its former splendor. One big project involves installing new shingle-covered porches, restacking end of the house's Colonial Revival porch, that will help shade the south side of the house. A living room addition off the west side of the house already defines the footprint of a wing removed in the '70s. Existing rooms will undergo a major remodeling. The kitchen, now relegated to the east side of the house, will be moved to the center, where it spans over the family room. The old kitchen becomes a game room; the new breakfast area sits adjacent to the children's bedrooms on the second floor. Meanwhile, the end sitting room will be converted to a home office, and a new dining area will be tucked into a glass-enclosed bay that will be refaced to the inside, making the entire west side of the house "modern" after remodeling.



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Second Floor**Proposed Plan****Existing Plan**

Bumping out the gable end over the new west wing adds 4 feet to Abigail and Geoff's bedrooms, and allows the space to become a true master bedroom suite, complete with a walk-in closet and an enlarged bath with a soaking tub, double-sink vanity, and soaking tub. The bathroom for the couple's two sons gets much-needed storage; at the same time, the floor features a bathroom to improve the flow in a poorly configured bathroom. All of the McCloud bedrooms will have access to the restored second-floor balcony that runs east/west, overlooking the water.

Third Floor**Existing Plan**

The layout of the top floor, which creates a bedroom, crafts room, exercise room, and storage storage, doesn't change at all. But this floor gains a additional bedroom when the skylights are removed and three short dormers are restored.

Proposed Plan

several 1906 porch grand piano. "There'll be lots of music and entertainment in this room," says Holt.

Above, the new addition, the McCans are going to bump out the gable end by 4 feet to enlarge their second-floor bedroom and increase the size of the adjacent bathroom and dressing room. "I used to have clothes hung in different places all around the house," says James. "But now we'll have a real walk-in closet." The bump out will also enlarge the study below and the room on the third floor above.

Although the bedroom expansion won't duplicate the 1901 dressing room with a massive fireplace that used to be just off the master bedroom, it's another nod to the house's past life. And that's what has TDH general contractor Tom Silver excited. "That is my favorite kind of renovation," he says. "We're bringing something back close to the way it was."

Closer to, but not all the way back. The McCans don't want to return totally to the building's Colonial Revival incarnation, particularly its raised plinth and fascia. A 19th-century summer house built for a family with servants doesn't exactly fit the lifestyle of a year-round, but less family in the 21st century. For instance, the kitchen presently occupies a wing off the side of the house—for when you have a staff, but unsupposedly for modern renovations. As Holt explains, "Back then, nobody wanted to see the cooking, hear the cooking, smell the cooking."

Not so the McCans. "Cooking at a big pot over fire, " says David. "The kitchen has to be front and center." The new galley-style work space will be relocated right away from the front hall, in an area now occupied by the dining room, and will open to a 500-square-foot family room. "We'll spend all our time there," says Janet.

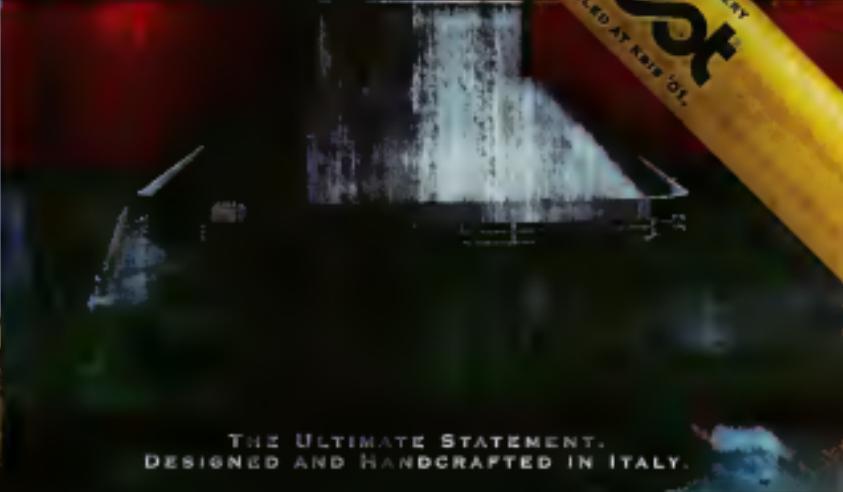
The family room, which faces Manchester Harbor, has a capacious sofa, but the best in the number and the plan to the winter has been



Tom Holt and Jason Adams consult the plans for the long-awaited addition as they measure for foundation on the west side of the house to make room for the new foundation.

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panelling. Holt's plans will hang back in the form of a shade-giving porch. The design also includes the second-floor balconies and gables; these she'd done like never-moved at the last renovation. "They built their summer residences off along the New England coast, notably in Newport, Rhode Island, and the beach towns around Block Island, including Montauk, Maine," he says.

The project from start-to-finish will take nearly a year—longer than most. The Old House project, "it's very small like a long haul," says Tim. "But it's a big project. We're going to paint on changes already. The owner is in digging a hole for the new wing." In addition to moving some walls, Town core will replace all the electrical wiring, windows, roofing, siding, and shingles, as well as the main heating system and most of the insulation. "The house will meet today's standards, by all means."

T.O.H. owner Chapman Nease Abrams agrees. "On a house like this that goes through more than a first major renovation—with doors and windows moved and floor plans changed—there's bound to be some coded upgrades. Having lots of odds to be addressed," he says. "And with the floor plan rearrangement and the restoration of some of the old elements, there's a lot of detailed work that will require extra attention."

Out on the front half, David, Jane, and Holt are having an ongoing meeting of the sort that clowns, hipsters, historians, clunk and archetec: as a project gets under way. "In the original house," says Holt, "the hall had open arches going into the study. It was closed off with a doorway in it—a new." And or the back wall, directly opposite the main entry were two 7-foot tall French doors that opened onto the harbor. "We'll get a look pretty close to the way it was."

The idea pleases the McCors, especially David. "This will be our vision. You'll come in the front door, look to the left into the family room and kitchen, look to the right across the study into the living room, and straight ahead past the banister. That's where I call home." ■

The Shingle Style of the late 1800s developed in response to a newly standard and wealthy leisure class, which was looking to escape the same sort of confinement of Victorian architectural styles. They built their summer residences off along the New England coast, notably in Newport, Rhode Island, and the beach towns around Block Island, including Montauk, Maine. (The names of the houses in this group—the River House, the Fort House, and the River House, and a fourth, now lost, that may still stand near how their owners lived in the cities," says Stephen Holt. He's involved for the third This Old House project. "People came to these places to have fun." For more on the Shingle Style, see "Beats in America," September/October 1998, page 71.)

These refined summer-shore became clients for the premier architects of the day, including Henry Hobson Richardson, Stanford White, Charles McKim, and William Penobscot Brewster. The style then designers developed borrowed elements from a wide variety of residence types, from south, northeastern and English country cottages to French chateaus. "Shingle is an eclectic mixture with lots of different volumes and shapes," says Holt. Whereas previous architectural styles were exterior or one-oriented, with symmetrical windows and door placements, the Shingle Style is characterized by a mix of freeform shapes and forms—tucked porches, low eaves, broad overhangs, long porches, and steep gables punctuated with wide dormers (as seen on Sunnyside, above left). All of these were put together by stonemasons and masons covered in red-coated shingles, a relatively new material developed by mill from the maple forests of the Pacific Northwest.

Holt calls the Loring House in Manchester (above center) one of the best existing examples of the style. Perched on a weathered cliff, the building's square base is cut out of the earth so the steep gabled ridge goes very low to provide foundation. A finely refined collage of materials—concrete up the interior walls and roof, as the exterior brick chimney and stone-lined hearth. "That's what the Shingle Style is all about," says Holt. "Working with natural materials, using lots of different materials, all in a very organic way."

Shingle (above), probably the greatest example of the Shingle Style ever built, was erected in 1875-1876. It occupied a prominent spot in Jamaica Point in Manchester until 1938, when it fell into the ownership of Holt. The Fort House suffered the same fate in 2000, so here we have an array of Manchester's Shingle houses. The River House, like the River House, survived, though not without losing much of its original detail. But the style maintains a firm grip on the imagination of both architects, such as Robert A.M. Stern, and homeowners. Those don't want modern interpretations; they want the real thing. "I heard that a couple had built an exact replica of Shingle in the point at Maine," says Holt. "My great-grandfather would have been proud to hear it." —J.G.



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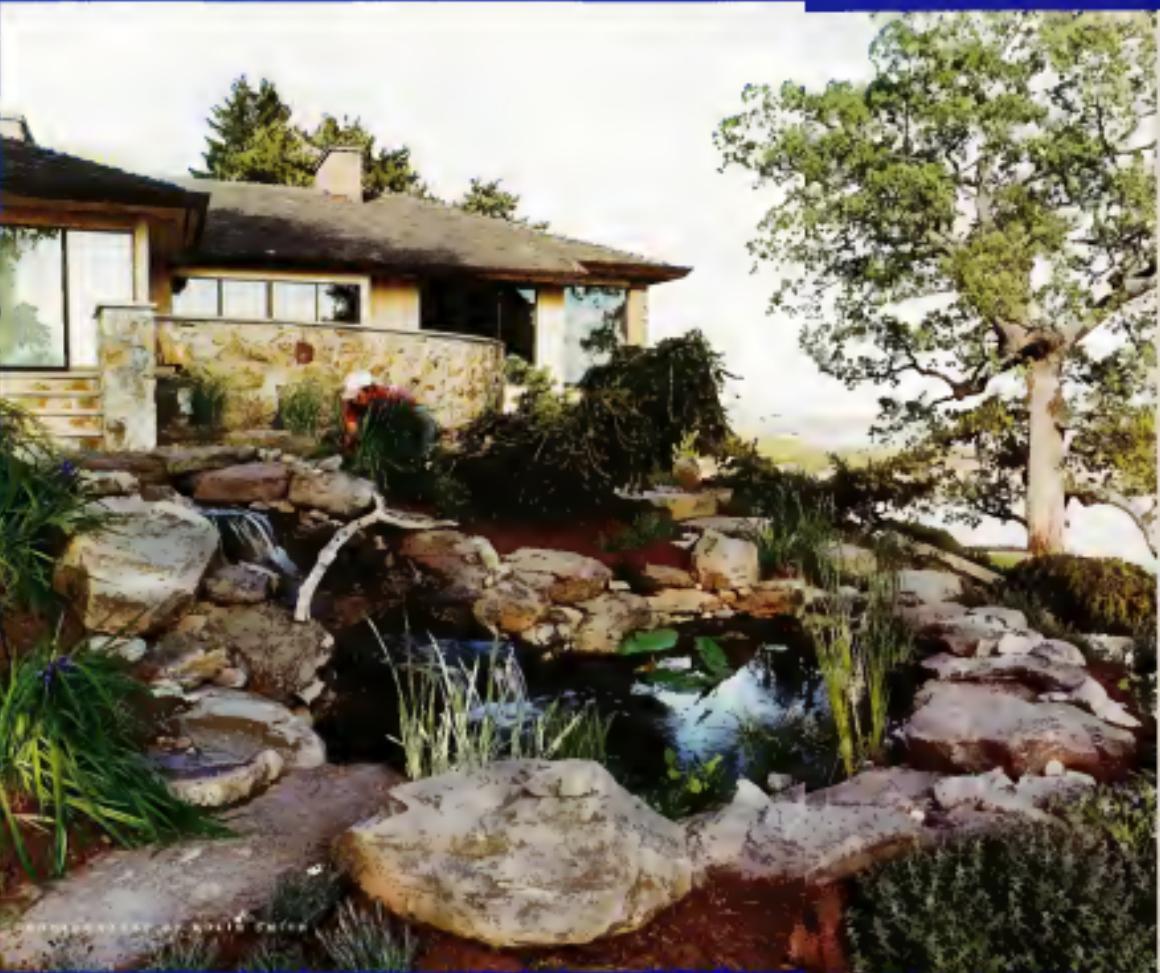
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water, water, EVERWHERE

Two ponds and a waterfall connect a house on Long Island Sound to its landscape

BY TOM CONNOR

twenty years ago, a businessman and his wife were bewitched by a particular waterfront property in Riverside, Connecticut. What attracted them was not the house, a '50s ranch, but the land on which it sits: two acres of lawn and rock outcrop that slope steadily down to a broad expanse of exposed rock ledge and Long Island Sound.

After they bought the place and moved in, the couple would frequently have coffee or cocktails on the small stone patio in back, which was bordered by a long retaining wall with a set of narrow steps down to the lawn. But they wouldn't stay on the patio for long; soon they'd be descending the steps and crossing the grassy slope to the water's edge. The closer they could be to the water, the happier they were.

Hoping to gain a larger area from which to enjoy their water view and to accommodate more guests while entertaining outdoors, the couple called John Berger & Associates, a Redding, Connecticut, landscape design firm. "We thought we'd expand the patio with a natural progression of stone terraces down the slope, like something you might come upon in the woods," the husband recalls.

With the couple's request in mind, landscape architect Lu Hand-Pry took one look at the site and thought, "We can't bring the house closer to the water, so let's bring a waterfall closer to the house." Hand-Pry envisioned a central waterfall four steps down from the existing patio, and a fountain terrace adjacent to it. The water would flow from a smaller upper pond to a larger lower pond, and would be constructed of natural stone to echo the granite outcrop on the property and the rocks at the water's edge. The project got under way last fall when Hand-Pry flew to Pennsylvania to help select weathered fieldstone slabs close in texture and color to the outcrop for the new terrace. Then, a week later, a crew of nine workers arrived on site, and the initial work began.



② Construction manager Mark Ausenbacher rolls his crew long and low there. Once the pool's 40-foot retaining wall and its two narrow steps, plus the 14-foot-wide staircase of Arizona-style steps. Then, they backfilled 100 yards of fill sand, using a front-end loader/backhoe, graded the area to reduce the slope and to create a level surface where the new swimming terrace would lead to the upper pool. To excavate the roughly 28-by-28-foot pool and the waterfall, the crew dug until they hit bedrock about three feet down. "In fact, below the upper pool, the bedrock excavation is 7-by-12-foot instead of earth," the backhoe operator excavated a 7-by-12-foot section of earth for the 8-foot-deep 14-foot linear waterfall hitting rock three feet down. Crew members poured concrete directly to the waterfall edge to create the pool. Backfilling 3-foot-tall walls of cinder blocks and interlocking Retaining Wall blocks used a cement mix to treat cinder blocks to form the curved walls. (cont.)

③ To create natural-shaped ledges for the pools, crew members cleaned it 6 yards of topsoil, then smoothed it over the sides and edges of the foundation to form curved surfaces. Because water would find its way through this delicate rock ledge, four armchairs, the ponds required waterproofing. To prevent damage, the liner first fitted a flexible underlayment to the contours of each pond, then Tim Byrnes, a project foreman, placed stones on the edges to keep the underlayment in place. (cont.)

④ After the crews laid the 40-millimeter-thick sheets of rubber over the underlayment, adjusting them to the ponds' contours, they pasted the two main waterproof sleeves overlapping layers that guide the water from upper to lower pond—messing it pieces. They also laid the bottom liner, then the ponds' end layers the outer liner. From this view, while the preceding photo from changing a rock (cont.). Letting workers change the edges of the rubber liner, holding them horizontally the coping stones that circle each pond.



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4) To ensure an aesthetically pleasing cascade of water, Krembs leveled the upper water-holding stone (soil) so that water would fall evenly along its entire surface until it ran off the edge. He hoped the lower stone's kick just-in-time to the water would collect immediately, creating a pooling effect, before building down to the lower pondside to the force of the flow.



5) Having made the pond edges water-tight, some members filled them using a garden hose. To carry the water from the lower pond to the upper—and bind the water-tight continuity—the crew placed one end of a 30-foot length of flexible 3-inch PVC hose into the lower pond about 12 inches from the edge of the lower pond. They then ran the hose up along the edge of the ponded waterline, burying it below soil surface, and then placing the hose end in the upper pond, where they placed the hose out onto the surface. At the top of the pond, Doug and project manager David Daeniglio attached the hose to a submersible cast pump (hose) and dropped it two feet below the water's surface. The 1/4-horsepower, 97-watt electric pump runs continuously and recirculates the 1,000 gallons of pond water at a rate of 3,000 gallons an hour. It is powered by an outlet box buried beneath the planting bed next to the lower pond, which remains connected to the house's electrical system by a heavy-duty 10-gauge wire buried in an underground conduit.

6) The water-hill was now ready for a test run. With the pump turned on and the cascade unleashed, Krembs and Daeniglio tested the waterhill status to further fine-tune the water flow (insert). If the lower pond's water level falls 1 inch or more due to evaporation, it will cause a tidal flow, similar to that found in a taller tank, to lift a valve. This allows water to flow through the 1/2-inch irrigation system's components through 50 feet of flexible 1-inch PVC pipe under a concrete slab, which sits atop the bottom of the pond. It cannot cause the lower pond to overflow; instead it diverts into a 7-foot length of 3-inch PVC pipe, which runs into a 78-foot, 2-inch PVC pipe that emerges in a planting bed at the property's edge. Either way—a plentiful cushion of water and two filled-to-the-brim ponds are guaranteed.



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GO FISH

With the waterfall's landscaping and systems installed, it was time for Mark Krasilnick of John Geiger & Associates to bring life to the pond. First are conditioning the chlorinated water in the pond with a neutralizer to stabilize chlorine levels and make the environment safe for fish. Next comes the flora. To create a planting bed around the pond's stone borders, he first tracked in 10 yards of topsoil. Then comes mosquito Willow, being planted grasses (1), one at the main plants—cattails, water lilies, reeds, perennials, and flowers are others—chosen by landscape architect Jim Headley for their visual variety and ability to stand up to the site's conditions. "These plants will have to be able to take a lot of wind, sun, and salt air," she says.

Since the pond's bottoms are covered with native substrate, nothing can be planted directly in soil. So Krasilnick installed plant stakes (2)—including tree, picket rail rails, lattice, horizontal, and vertical (3)—before applying each plant's soil with pea gravel, then staking back to the pond floor so the roots set before the water begins.

Krasilnick selected water hyacinths in both species. These fragile tropical plants extract nourishment from the water via their drooping roots; they generally need to be deadheaded annually. To ensure

that those in the upper pool don't overwhelm the fish, he secured them with thin-gauge wire (4) stakes at the pond's base.

Rel. or ornamental vinyl, completed the tableau. These hardy specimens can reach three feet in length, live 10-15 years, and winter over in a pool where moving water keeps the surface from freezing over. They can also be expensive—so the very costly varieties cost thousands of dollars—but Headley believes they're worth their average price of \$140-\$300 due to 10-year life. With their distinctive coloration and their individual personalities, "they become pets," she says. She also notes that red vinyl would look radically different bright red-orange and white, cream, and blue, orange, purple, and all-spotted red/orange.

To conclude the fish for release into the pool, Krasilnick flushed them, including the perimeter hoses (5), or plastic bags filled with water for half an hour (6) then opened the bags, exchanged a third of the water for pond water, inserted the bags, and let them sit another 20 minutes. After releasing that crew a second time, the nearly 10-hour process came to an end, and Krasilnick released each fisher (7) into its new home. —JONATHAN ASKEW



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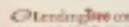


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Before moving, Doyle and Julie Brown's 1872 Indiana house in one piece would have meant removing lots of numbered items from attachment cost. The collectors' costs are also building costs four times and truck of \$15 miles outside of town (in 1977). It doesn't through a portion of the second floor ceiling causes its load the jacks and stack them in place at a new overnight lot.

MOBILE HOME

You can save a house by moving it—but consider the costs before hitting the road

BY MARK ALEXANDER



Ever consider moving? It's taking a 40-ton residence a ride, not as hard as it sounds. A few short hours, a dozen or so hydraulic jacks, dollies, basic and in some cases, a few commanding sons and grandsons, and it's been set up almost anywhere. This summer, they might even make a permanent migration across a country and into a new life.

It's not just the house that's mobile. In fact,

it's the people who are moving. More than 100,000 Americans annually move their homes, and many more do so without ever leaving their state.

It's not just the house that's mobile. In fact,

PHOTOGRAPH BY MARK JORDYTH



Cribbing and Jacking

Length of 4-foot-long timber cribbing, one stacked in holding a house as moving each section is performed (top). Similar cribbing supports a 25-ton freshwater well (bottom), one of a series that cuts against the basement under the house. They lift the structure off an old foundation and then lower it into place at its new location.

WHY MOVE?

Inpiring the move is one of many reasons to move a house, but most of them boil down to a fractured relationship between the building and its location. Often, properties are owned by local governments to build a parking lot, or widen a road; zoning changes or roadside improvements can turn quiet residential lots into noisy (and valuable) commercial parcels; or escalating real estate costs can make the land more valuable than the structure that sits on it. And sometimes nature takes over, eroding a beach or flooding a lowland. If a building sits on any of these surfaces an economic, environmental, or historic value, measured inversely, like the credits, stand ready to ride the wave.

Carl Scoll, executive administrator of the International Association of Structural Moving (IASM), says its United States members handle 10,000 percent relocations every year, a small percentage of which are temporary jobs—moving houses to repair or replace existing foundations. And, according to mover Joe Bentz, of Gary, Minn., the number of moves may be on the increase. "Whenever the stock market stagnates, I get busy," he says with a laugh, while standing under a 248-ton log ledger, supported by cribwork and 27 jacks, beside a lake in the northern part of the state. "People start moving when they've got worried about losing it down." He notes that certain water-dependent regulations and higher disposal costs are making relocations more expensive than ever, testing the economic viability of a home move. "It used to be you just took everything to the landfill," says Bentz. "Today it all gets separated in the transfer station—logistics in one box, drywall in another—and that gets expensive." Ron Smalley, of the



50 percent of local regulations require weekend moves. Assuming the utilities and the police charge a flat-hour minimum, a homeowner could pay nearly \$11,000 for moving just a few weeks on a weekday move. Cleaning out garages with overhead lights and electric lines can cost as much as \$20,000 each. Interstate highways aren't usually possible, because they don't allow cargo wider than 10 feet and most enterprises have a maximum clearance of 13'6". "When people call me and say they want to move a house, I'll give them the ballpark figure for moving an overhead wire before Ielder coming over," says Bentz. "Then I tell them to get a door and drive down the road until they run out, covering the overhead wires as they go. Often it seems better from their angle."

Faced with the impediment of deal-breaking utility charges or topographic barriers, movers have the option of cutting a house into smaller, more manageable sections, but that too can carry a

Portland, Maine-based demolition firm Ascentech, says that knocking down a 1,500-square-foot Cape costs \$7,390, while demolishing or the surrounding units another \$8,500.

At these rates, moving the house would be cheaper than demolishing it, depending on the distances involved and the obstacles along the way, and Winkler demands that it becomes necessary. Bentz says relocating an average 2,000-square-foot house on the same adjacent property can cost from \$2,000 to \$10,000—excluding building the new foundation and buying subspace (vacant) to disassemble and reinstall the plumbing and structural spans. But moving houses along local public roads adds considerably to the cost because of the obstacles encountered along the way. Urban areas require to move their wires—a complicated process that endangers workers and encourages customers—and the price of doing so reflects that reflection. Every community is different, but Bentz says a good rule of thumb is to figure that each utility involved—electric, telephone, and cable—plus local police, will require two crews, one to do their work, before the house passes by and one other. The crews and their equipment may cost \$390 per hour. (Add

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At the conclusion, the final phase of the "Bosque" houses are lifted off their foundations and re-erected atop a new foundation. California code requires that the houses go through an earthquake-resistance retrofit during the renovation after following the move.



Moving in Sections

hely pricing—and up the anxiety rate—by adding on costs for dismantling, additional trucks, and insurance. Then their Dickie and Julie Evans managed to construct their 128-parcel Indians house from Whittier, California, to the nearby small town of La Selva Beach. They repaired the 2,000-square-foot residence for free—it had been condemned because of a 1995 earthquake—but persistently proposed to leave it as it was. A local court ruled last July 15 that such a deal is inexcusably draconian.

That cause the last news is a new dropping wire-tension antenna of \$15,000. "There were wires all over the place," says Julie. Their committee decided that cost money by using the house for free chairs and lifting them by crane onto a series of truck beds, so they would fit under utility lines. The four-inch parade route to La Selva was made in the middle of the night for the public's portion of the trip, to avoid traffic. The journey cost the Stevens \$41,000, plus another \$40,000 to pay the house back together, including code-mandated earthquake-resistant straps and shims. The land cost \$33,000, bringing the cost before tax bill to \$43,100. Julie estimates they've invested another \$800,000 in gas and completely consume, but it's meant supplemental to the property's worth at \$3 million. "As the neighbors say, location is everything—and that's true for a house move," Julie says.

HOW MUCH DOES A HOUSE WEIGH?

Since building his first project in 1948, building master Peter Friesen, of Lynden, Washington, has built some 8,000 houses off their foundations, neatly making him one of the most experienced masons in the country. With one task, he can set up a house and leave pretty much where it will take in get it off the ground. Because every house is different, Friesen says there is an absolute formula for calculating a house's weight. On average, though, he figures a residence weighs 15 lbs. the square of approximately 0.25 tons per 100 square feet of living space. A fireplace with a two-story chimney adds another 1/16 to 10 tons. Still, Friesen doesn't even try to make highly precise calculations of a house's weight. "Even if I had to figure a single room, one hypothetical jacks have at least twice the capacity that they're rated for," he says. He should know; in 1981 he patented the *polyjack*, the first self-adjusting foundation system—a series of jacks constructed by a simple hydraulic pump/jack that's started after almost 100 years—despite Dickson's



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FIGURING OUT THE FINANCES

While the *Realty Times* sidebar appears to have all the right stuff, home buying experts emphasize that homebuyers should look dispassionately at all the costs before committing to a move. "These decisions are often driven by emotion," says Les Bell, an Atlanta, Maine, contractor who specializes in restoring (and sometimes enlarging) 19th-century homes. "But if you spend \$245,000 to relocate a house, and you can buy a similar house two miles away for \$475,000, what have you really gained?" Joe Faust's rule of thumb is that if a house has an above-average value, a move should cost no more than half what it would take to build the same house from scratch. "If the move will cost 70 or 80 percent of building new, don't do it," he says.

To put together a realistic budget, you'll need estimates for several expenses with local references. (Because lots of house moves also involve renovations, you'll probably need a general contractor too.) The movers will sort the packing and moving date, as well as the day of house, assessing the best way to client areas and other obstacles. Each package should include all costs of disassembly.

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Blowers get the glory when their Hurricane kits relocate historic monuments—but the causing heroes of house moving are average Americans who save plain-Jane houses off Main Street. Take Michael Hall, an electrical engineer based in Waynesburg, Pennsylvania. When his church bought a neighboring eight-room house and planned to knock it down for a parking lot, he stepped in to save the 100-year-old building. “I hate seeing anything ruined that can be salvaged,” he says.

Last year, for a \$100 donation to the church, Hall acquired the house and several 1/3rd acre lots in a piece of property he bought for \$24,000. That's separate from Wyndham, an off-the-map town near Burlington, but it already had sidewalks, streets, and sewer. Here's how the rest of the month worked:

- Payzant, la femme mûre Evi Miller: \$190,000
 - Tous deux 60-er les années, places, sont aussi TV mises: \$8,000
 - Chip et gars leur leur Résidence: \$16,300
 - Meilleur émission avec moins d'abonnés: \$14,147,24,000

Scaling the value of Hatt's work to create and replace the houses, the whole would come to about \$100,000, far less than it would cost to build new. And Hatt gained a nice piece of leisure property that was \$400 a month to rent. "I could probably sell it for \$10,000 more than I paid for it," he says. "And I got commitments every week about how good it looks."

Nanley Marion Neff's 1836 house through the years of Westmoreland, Pennsylvania's (LUT), repeated the moment and remembrance of all its ownership until her "Going the Stake," however, a family tradition endures that someone exhibits a more LUT. Double-headed snakes carry the weight of the debate as it alternately regulates the memory



transporting, and maintaining the house, alert you to any odd council notices—such as permits for traffic control—that need to be performed by others, and clarify who is responsible for making the necessary arrangements, including liability insurance coverage.

take out an individual policy called a "regular float," a float to carry insurance, the cost of which is passed on to you in the bill. Then check with your insurance—it is somewhat cheaper to use your homeowner's policy to insure the structure. Neither policy is likely to cover commercial damage. Not being concerned by the financial aspects, unless you agree to write the whole building in proportion to its value, a few minor loopholes might be cheaper.]

Don't forget to budget for digging a new foundation (and filling in the old one), if needed, painting or re-shingling, and landscaping and improvements, any basic house needs. Passovers on other expenses in the basement will still require you to lay out the new set up or replacement. Finally, if the house is being lived in, you'll probably want to take the big screen TV off the shelf and pack the fine ones, but for the most part your furnishings can stay where they are. Banks will finance a lot more. After a house is refinished, the value will convert to a conventional mortgage, a process that may involve various closings and a different appraisal.

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Cutting Into Panels

FROM LIFTOFF TO LANDING

If the budget makes the project worthwhile, the next step is to construct a new foundation that perfectly matches the dimensions of the house. Then, after the engineer's vibration records have determined the home's egress and telephone services, heating and cooling systems, and water and sewer lines, the owner rolls onto scenes.

The steering crew's first task is a whole-house move: to use through-the-foundation walls and static-tie or static-cast I-beams to position under the site, parallel to the length of the house. The bottom line: in effect, a six-inch rectangular foundation for the structure; they reduce the force of the jacks and support the house like a car chassis during the move.

Once the I-beams are in place, the crew erects a series of jack jacks underneath them by stacking crating lumber like Lincoln Logs.

Each jacking system sits on a platform for a 15- to 20-ton hydraulic jack, the assembly of jacks is connected via hoses on a central pump. "That last lift off the foundation is the most suspenseful part," says Brant. "If you've got an old house with lots of corners, you never know when a grommet decides to stay put," he says. "The best part is, low stakes is where you find out where the windows are. There's always the chance that some plaster might crack or a joint will break. It's sort of the opposite of a house settling—there's not much you can do—and it can be a successful moment for home owners, since people love it later."

When the house is raised up to two feet, depending on the terrain and foundation, the crew slides another set of I-beams (called corner beams) underneath and perpendicular to the first. These support a series of exterior cladding—heavy-duty undersheets that allow the house to be rolled off its foundation. Then the house can be packed and shipped away—the tree high enough to roll in a series of compact truck axles underneath, it's time to let the soul—slowly



In order to move Brian and Jason's 2,800-square-foot house across along narrow roads and steep terrain, it had to be cut into three sections and transported in pieces. A worker cuts the bottom five walls at a time using a saw (above left). Careful labeling (center) made it possible to piece the house back together.

At the new site, the process moves in reverse. The dollies help slide the raised house off the axles and roll the house over, on new foundations, where the beams are slowly lowered by the cranking-and-jack system (no notches cut into the foundation walls). Once the house is in place, the beams are pulled out and the corners are filled with concrete. Next, subcontractors start reconnecting all the systems, while the homeowners walk through the house checking out the views and looking for cracks. "The funny thing is, not one crack happens when you set it down on the new foundations," says Brant. "It's a house built on a concrete slab with no basement, so there will often be shifts in the slab and move in contact with the house."

Cutting up a house may look lonely and resembelng chess, the way the Bowens' moves did, or it could also reflect a whole-house move. After the second floor sections have been cut free from the first floor, the beams go under the second floor joists, and crews perform the work of the exterior cladding, but sometimes a house needs to be closed out smaller lots. That's how Farpoint, Maine, entrepreneur Fred Taggart decided to move Brian and Jennifer Harrick's 2,800-square-foot cottage to the other side of Sebago Lake.

The unimpressed, 6-foot-wide driveway leading up to the cottage

PHOTOGRAPH BY JEFFREY D. STONE



A crane helped contractors assemble the Harricks' 2,800-square-foot cottage in eight months (above). All the details of the rustic exterior were added in the move (top right); ultimately, a new stone foundation will be built under the house (bottom right).

was bounded by mature trees, making a whole-house move impossible over land. And moving it across the water—either by barge in summer or by truck in winter—was blocked by Interstate 95's protection of under-watered regulations. "We were pretty much boxed in," says Taggart. So he decided the only way was to see the building sections small enough to fit into a motor trailer (which would conveniently fit under utility lines and underpasses), if possible.

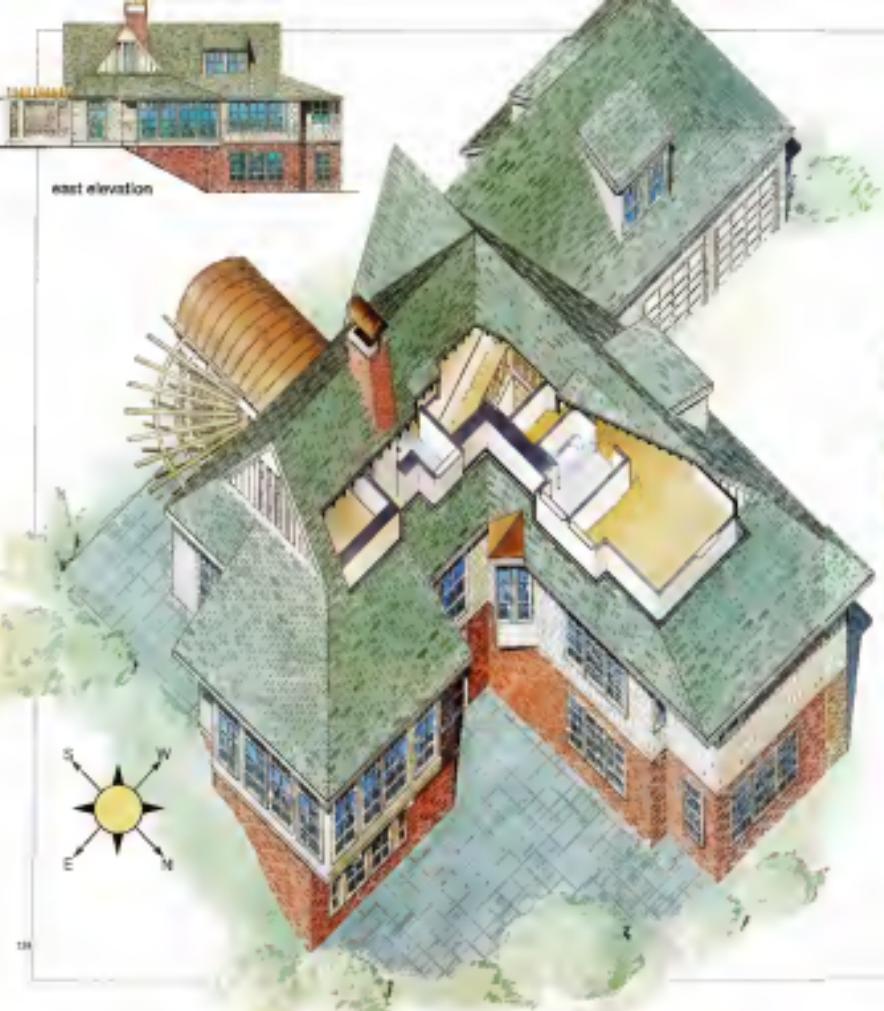
The house's basic steel walls and few interior partitions made the dimensionally-reduced simple. After removing all doors, windows, lead-lined cabinets, and back fixtures and carefully padding everything in foam and bubble wrap, Taggart's crew stripped off the corrugated metal roof and broke out the insulating tarp. "We just started cutting corners free," says Taggart, who even

sly cut up the entire house—roofing and all!—into about 30 sections. Before each piece was moved onto a truck, project manager David Johnson reviewed it with a schematic plan. The Harricks had chosen an exact reconstruction, so everything had to be accounted for. "You'd pull off a little piece that on any other job would go thrown away, and here you'd have to save it and fit it in," says Johnson. The process of dismantling and rebuilding was done over a 16-week period.

Reassembling the house required Taggart's contractors to go against their instincts. "The challenge was putting the crew to piece these squares and levels and start eyeballing," says Johnson. "You could see marks on the walls where the framing had been, and you had to nail it back together that way or the doors and windows would never fit."

True to their intuition, the Harricks needed to remove almost everything, including the old metal roof, the older kitchen cabinets, and the windows with a "Camp Wimberley" grille attached onto the pane. "We were head-over-heels in love with the house just as it was," says Brian. "The dream is in keeping it intact, but at a whole new location." ■





east elevation



CREATING A new classic

This Old House magazine sets out to build a show house that combines modern comforts with vintage-style charm

BY AMY LAUGHINGHOUSE

DRIVING LAST JUNE THROUGH BUCKHEAD, the densely wooded and well-heeled neighborhood in the northern reaches of Atlanta, Georgia, architect Jonathan Fick and builder Jason Yowell headed to a property they hoped would be the site for the next *This Old House* magazine building project. In his headcase, Fick carried plans for a house strikingly different from the brick stucco, recessed Gable, massive, and quirky '70s style levels that line the neighborhood's hilly streets. If the new set looked good to him, he and Yowell would be coming up with the expertise and Marco Corporation, one of the world's leading manufacturers of home improvement and building products, to create a structure that would showcase the latest thinking in residential design. Dubbed the Tree Top House, it would combine elements of traditional, Art Deco, and Victorian era architecture with a contemporary floor plan and fixtures suited to modern family life. An appealing proposition, to be sure, but as Yowell made his way down a street at the bottom of a curve and parked the truck, the challenge of finding that elusive set only became all the apparent.

Right before them was a narrow, steeply sloping one-third-acre lot covered in dense clusters of rhododendron and azalea, all contained in a cluster of overgrown ivy. From street level to the back fence, the land rose 30 feet or less than 10 yards. A steep water drainage ditch ran along one edge of the property, then turned and cut across the corner and off the lot, separating any planned construction between it and the street. And up on a back corner, behind a canopy of weeping pine and tulip poplar trees, sat a 10-year-old, four-story split-level bungalow, vacant and looking the worse for wear, a poor fit towering over the deck.

"There was deadening silence," says Fick, recalling for first look with Yowell at the proposed building site. "I immediately thought of all the asphalt and loam we would have to prep through." Even Yowell, a builder known for his attention to detail who had been working in the Atlanta area for eight years, admits, "I knew it wouldn't be easy."

Not just in Atlanta, but around the country, would be homeowners not facing similar difficulties when looking for suitable properties. Assisted by the columned universities, sense of community, and other economic assets of established neighborhoods close to vibrant urban centers, they're often encircled by overbuilt housing stock on less-than-ideal sites. The Ficks and Yowell were contemplating, only months from the down-the-line opening of the Southeastern, with just that kind of odd lot—one requiring tremendous reengineering and digging in to斗地主. According to Bill Field, of Harry Mathews Real Estate in Atlanta, "If a client wants to come here to the Southeast—the 8-lane highway that encircles Atlanta—it'd be hard to find a house that offers the features they require." In such densely built areas, finding a prime property that's livable and doesn't present unique challenges—or one that has yet to be developed—is next to impossible.

What all point to is that locations with obstacles offer a great building opportunity. "Clearly, we believe in renovation and preservation, when it makes sense," says Dennis Sopko, editor



ABOVE: Builder Jason Yowell (left) and architect Jonathan Fick stand on a section of the old owner's home's stone fireplace while reviewing the building plans. OVERLEAF: The 12,000-square-foot acre-and-a-half base-floor bungalow and a finished basement, and feature field-reporter details, such as steep gabled roofs, narrow mullioned windows, and cozy shed dormers.

basement

a chief of *The Old House* magazine. "But sometimes housing stock hasn't aged well, or wasn't particularly well designed with." In this project, the team chose to restore the most desirable elements of an old home in a new, thoroughly up-to-date package. "With this house, we're not only proposing a complete restoration of the concept of home, using the very high standards of design and craftsmanship set by our architect and builder, we're also helping to reinvent and reinvigorate the neighborhood."

The Old House had turned to Rick because of his ability to create modern residences that effectively utilize the vocabulary of traditional architectural elements—such as multi-paned windows, shed dormers, and wraps, gabled roofs. Fortunately, both he and a contractor managing a house on its own, even when the circumstances seem insurmountable. "It's a step, there's no such thing as a difficult one," he says. "It's just a question of how much research and thought goes into custom fitting the house to an interior. I like the process involving like a book, taking an overview and getting to know more and more about the site, finally, you land."

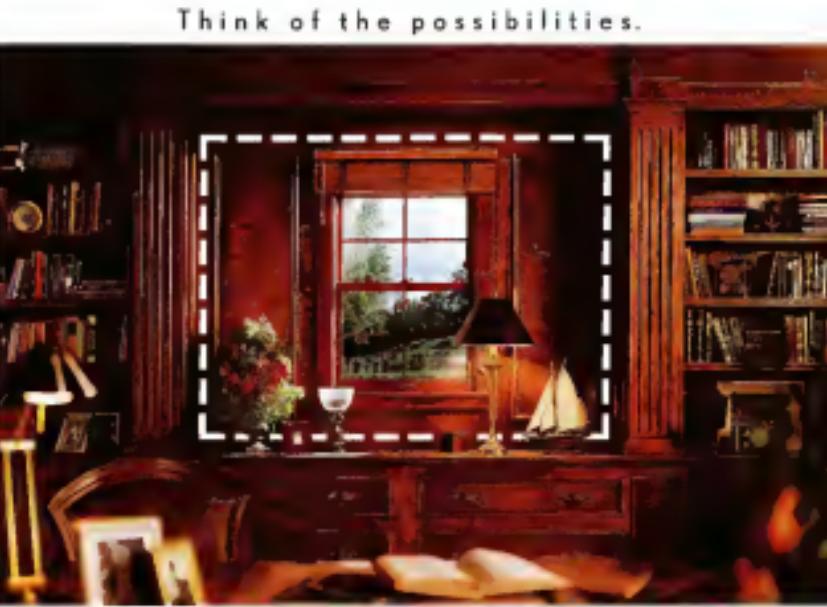
Initially, even Rick had a hard time imagining one home on "land" the design he had in mind on the property. The Thompsons were concerned for a fire, spurious as it was, but the steeply pitched Atlanta property was located on one side by the ditch and on the other side by a neighboring house. Furthermore, Federal Emergency Management Agency (FEMA) regulations required that the house be built high enough on the slope

so it above a 100-year flood zone. But as Rick worked with the researchers, normally consulting and repositioning the house's footprint, solutions began to emerge.

"Turning the front facade 45 degrees away from the street and changing the orientation of the garage window problem with unfolds rules, which governs how close the house can be positioned to the property line, making this twist also enabled us to use the grade to advantage. Placing the main entrance of the house so the hillside gave the primary living areas a bright southern exposure and a dramatic, elevated view of the surrounding landscape. Plus, it opened outside of the house to daylight and to a walk-out terrace, which the house embraces on two sides like a suntrap." Daylit basements are becoming rare in Atlanta where a concern dealing with hills sits," says Yosick, who collaborated with Rick to accommodate the slope in the house design. "We were thrilled to be able to give an additional level of living space," adds Rick.

Once the major issues had been solved, Yosick went ahead and purchased the land, and the Thompson Home was under way. But not without some additional tweaking in deference to the demands of the Atlanta housing market, Rick needed to find space for three bedrooms, an additional one over the garage, converted the square study into another, and placed one in the basement. The final plan includes five bedrooms, five full baths, and one half bath.

On the main floor, Rick offset the varied heights of the site by putting the master bedroom, kitchen, and liv-

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To make room for the new project, Bunnell demolished the non-load-bearing fifth-level deck that first stood on the site. "We designed for space clear in town and the same house that was already on the property gave one place value over the next, just as a frame," he says.



ing and dining room on successive, slightly lower levels from the story. Eick's original design concept remains largely unchanged, although it is set to serve the better and needs of a contemporary family. For example, because most homeowners enter through the garage, he walled down the front entry and linked it to the garage entry through a modified entrance. A central hallway runs from the front door past a home office—which, given its location and abundant windows, serves as the home's nerve center if the house is in the market. Here the floor plan opens up, and long eight-foot-wide eaves at the eaves and six feet larger than they are. The kitchen flows into a dining room and living room with walls of windows that offer both the picture perfect and wooded backdrop. At the back of the house, there's another terrace and a vaulted-eaved screened porch off the kitchen; both can be reached via a set of French doors. "That house should say that it doesn't belong to any one era," says Eick, of his aspiration of traditional elements. "It should feel comfortable now and for a long time to come."

As the archaeologists do their drawings, Yowell confounds a flood plain study for FEMA and begins wrangling with the city of Atlanta to get the necessary approvals. "When you get into these at-risk neighborhoods, the only way is to make sure everything is done right,"

BUCKHEAD REVISITED

In the early 1960s, the workforce now known as Baby Boomers were a adolescence within a little leading pink wave by Cherokee and Creek Indians. By 1980, a local's hand outlined up a timeline after which it looks like Buckhead's population of Peachtree and West Peachtree People grew the area its present size. Not until World War I, when an influential Atlanta broker named John D. Wiley built his permanent home there, did the bucky invented begin because instant in a�타일able place to live. The city of

says Yowell. "They regulate everything from what trees you can cut down to how much dirt you can remove from the site."

Once the city granted Yowell a hard-won building permit, he was finally free to move ahead. First step: demolishing the existing structure. On an overcast morning in March, a 40,000-pound yellow truck barreled down the quiet street and crawled up toward the house on Yowell's property. For a brief moment, the 4-story white bungalow bounced over the clogged road, then began crashing onto the deck. The loud crack and snap of wood-shedding through the neighborhood as the house methodically reduced the house to a pile of rubble easily accepted into Dempsey and hauled away. By the end of the day, all that was left was the red Georgia clay for Yowell to dig, run and start building a new foundation. "It's going to be rough," he admits. "But we're going to make it work."

Atlanta improved Buckhead in 1980 and introduced a building ban that introduced a wide mix of historic houses. Today, Buckhead's 41 neighborhoods—which cover a total of 80 square miles—enjoy a mix of historic stock snapping from one seeming century to elegant Colonnade. The Colonnade area of Buckhead, which is where the Timeless Home is being built, has only recently undergone a resurgence as properties are being restored and values are steadily going up.



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a house for all seasons

A thoughtful renovation transforms a rough-and-tumble weekend cottage into a year-round residence

BY BARBARA FLANAGAN

"I

It was just a beach house," says Lauren Poyer. "A getaway."

And that was fine, for a while. Then it was time to make some serious changes to their late-and-far-from-Bay-Head, New Jersey, house. With the help of a clever redesign, Lauren and husband Perry Poyer transformed their one-time weekend hangout into a full-time family home—with a new master suite, laundry room office, and race-car-like bedrooms for two kids. "It's easy and safe from the stairs, so people are always shocked to see how much room there is inside," Lauren says.

Renting a house was not at all what the couple had in mind in 1993, when they bought what was then a five-bedroom, two-bath cottage. The home was simply a place to have fun. Lauren, who had "taken short" in several summer weekend houses with friends from Manhattan, had never dreamt her future husband to Bay Head years earlier. After Lauren and Perry married, they rented different houses for a few years before finally deciding to buy.

When they began looking, they wanted only one thing: proximity to the water. "This house just happened to be the one closest to the oceanview block and a half away," Lauren says. The 1,700-square-foot cottage wasn't particularly beautiful, but they didn't care, since they figured they'd be spending their time at the beach anyway. They also thought the first small bedroom would make a convenient "youth room" for visiting friends.

But after they had a daughter and son, Lauren and Perry gradually discovered that "we kind of wanted better than our weeds." Compared with the dry, dusty, rugged challenges they faced shooting kids around New York City, the beach, the boardwalk, the friendly neighbors, and the ease of living there became increasingly seductive.

So they decided to move to Bay Head and to make the house more livable. Because Lauren didn't want to commute to the city, she needed a home office. And the four bedrooms upstairs were small and dark, with tiny closets, shared flowers, and striped ceilings that were only 7 feet 3 inches at



Poyer and Poyer's, the Bay Head, New Jersey, beach house has a sleek exterior along the front of the house (from left) and a more traditional rear, separated by a white picket fence and arched gate. The arched entrance to the second floor. The renovated residence, just outside Princeton, takes coastal styling ("it matches the sea," says Lauren Poyer), used a fresh color palette and threw them up the exterior.

ONWARD AND UPWARD



Up a wider staircase under construction in the living room, Lauren and Perry made the most of the space by stretching the stairs by building a platform.

STAIR MASTER

As much as Lauren Payne liked the hulky, multi-carved staircase that came with the Blue Hen home, she never warmed to the sight of her two small children bounding down its precarious wooden treads. So when it became clear that the stairs were too steep and narrow to pass inspection, she considered it a blessing. “Our last contractor told us just pull out all of the old staircase and, instead, replace it because that would suffice,” she says. Through the now code-compliant unit stairs space from the living room, life will worth the price of ridding it forever.

“I rather than remove the staircase in one unnecessary section, construct David Thomas McLean and his crew dismantled it piecewise, cutting a wide-opening slot to cut it into two equal parts. (The transomless windows are visible in the bottom-right corner of the picture.) To accommodate the more gently pitched new staircase, the oldwood Landing had to be extended by two feet. That meant knocking out a section of drywall ceiling so that the necessary modifications could be made to the framework overhead. (The top right of this staircase was prefabricated from paper by a local manufacturer, with 6-inch slates over 12x16-inch trunks, according to code. After attaching it to the header and the nail studs, once they were in, we drove installed the site-built bottom risers. Where they formerly made like 30-degree landings at their steepest, the new set completes it in two, with the narrow end of each broad measuring 10 inches wide.) Though safety prompted the replacement initially, the leveling and regrading of the second story would have required a new staircase anyway; as soon here, the new staircase posts, framed out of 2x6s (16-in-by-16-in) laminated beams, mostly rests a few inches above the old.” —DAN D'ANGELO

the highest point. For a summit place, the owners qualified as squat, but in a pretentious house, they just didn't cut it. The couple wanted to transform these four bedrooms into three larger suites—and there's a few clauses where they were at—a plus add a master suite for themselves. The squatness, says project designer Tim Dugan, president of In Progress Remodeling, in Red Bank, New Jersey, could those goals be achieved by remodeling, or would they have to tear down the house and start from scratch?

The homeowners, who were proud of their 100-year-old house, were clear that they preferred to work with what they had. “We wanted to keep it looking like a vintage house,” Lauren recalls. “And as we got further along, we realized we could bring some of the rooms out and have a whole new house.”

That was true for the downstairs, at least. There, architect Edward Ballantine of In Progress enlarged the 1970s era kitchen by raising an adjacent porch into a 4 by 9-foot breakfast nook. The couple replaced the worn linoleum floor and white-beadboard-style cabinets with a limestone floor and white-painted wood cabinetry with a country look, and added an island topped with honed black and encased with stainless. A plywood, bumped out and given a bay window, became Lauren's home office, while a downstairs bedroom was turned into a playroom. Although the living room stayed under the original footprint, the owners made it more comfortable and give it more character. They replaced the original, winding staircase with a wider, more comfortable one (see “Stair Master,” left), and, after the loss of these several inches of space beneath the stairs, let recessed, built-in shelving. Thus they tiled the fireplace surround in navy blue, switching out sun and star tiles, and painted the walls with white-painted beadboard.



Before: Keeping an eye out and adding other windows, the architects turned a common basement into a spacious home office. The house also grew with an extended second-floor addition in a long, low profile topped by a new roof.

Before: First Floor



After: First Floor



But the changes to the second floor were what really allowed the home to grow. Deacon showed the home owners how the exterior needed work, which had a much smaller footprint than the first, was wasting plenty of potential square footage. He suggested tearing off the old gable roof, with its intricate shingle dormer spanning the front of the house, and replacing it with a raftered roof. This would give them more headroom on the second floor and permit them to build out a larger bathroom over an old fire-place addition at the rear of the house. By doing so, they nearly doubled the size of the floor (to 1,200 square feet) and improved the proportionality of the facade, without making the house seem larger than its neighbors. The architects further simplified both the exterior and the interior by installing larger windows on the second-story and putting prints in the staircase stone riser. The master bedroom now has a soaring ceiling that angles sharply up to a 9-foot height.

Tearing up the second floor was emphatically not what the owners had envisioned when they started the project. When demolition began, "it was shocking to watch our home go from a two-story house to a one-story house," Lattanzio says. "You'd walk up the stairs and be halfway."

But as the upstairs level was demolished, they realized that it "was not put together very well," says contractor David Thomas McCarr, and that the second floor was six inches out of level. Further work downstream remained

PHOTO COURTESY OF DEACON ARCHITECTURE





The addition of an exterior staircase and French doors leading out onto a narrow balcony opened up the main floor landing in the addition. "There are angles where I'd cut into bed and the room will be framed perfectly in that reading," says Lauren.



LIGHT AND LIVELY

To install a 6-foot-wide by 6-foot-long oval window in the narrow-lam hallway, contractor Geoff Thomas McCarr first invented a bracket, a silk, and two thinner struts to support the 2x12 steel frame. He then learned an online 3-D wood-plywood sheeting (1), following a combined template provided by the manufacturer. After routing the holes with a jigsaw (2), he lowered the rough opening (3) with diagonal blocking. Then he slipped in the oval window, fastened it with wood shims, and routed it in the sheathing with 15-inch galvanized roofing nails (4). Finally, after loosely insulating around the frame, he trimmed out the window with maple casing.—DAN DILLENBACH

the house was sagging. Although it wasn't unusual "to put beach houses right on the sand," McCarr says, the one used its back porch that ran down the center of the house. But the house had shifted,

and the piers were no longer positioned at the back; the main load-bearing wall. McCarr strengthened the structure by pouring concrete footings around the outer perimeter and replacing the center piers with two 36-by-92-inch girders made of glorified laminated beams, spaced 4 feet apart, running from the front to the back. Then he was able to build the new, expanded second floor.

Higher and wider, the new second-story bays finally resolved the problem of the sloping arrangement. The 650-square-foot master suite features a cathedral-like ceiling with an apolice window capping French doors. "We wanted to create some sort of special effect in the bedroom," says Deppen. "The vault brings in light by capturing some of the sky and the moon." The French doors open onto a 10-by-9-foot balcony, just large enough to fit a couple of chairs. The master bath has two sinks and a shower big enough for two; the walls and counter tops are covered in a beige inlay of travertine of small square tiles, accented with larger, honed-edge tiles. In addition to the master suite, the apartment contains two bedrooms for the kids, plus one guest room. The old bath got new fixtures and finishes. "In the summer, we really go a weekend without company," Lauren explains. "We can pack a lot of people into this house. And every one loves it because reading is my favorite."

However, there is one issue that even good performance and construction could not address. "Sand," says Lauren, who remains undeterred. "I just keep raking."



An oval window adds a cottage charm to the upstairs hallway.



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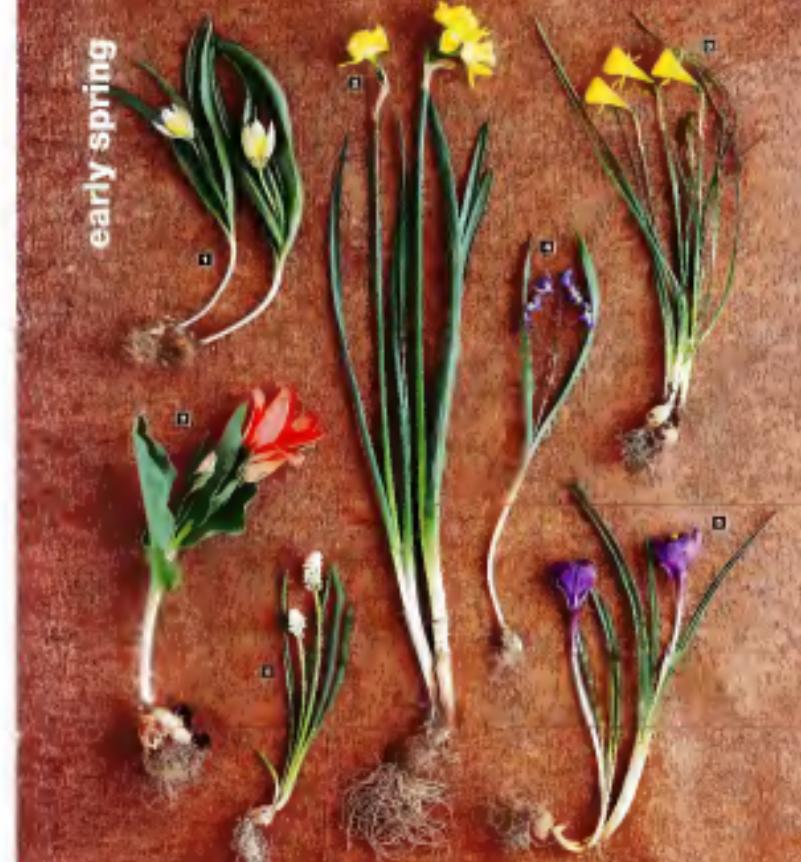
BY JAY KOTTER
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early spring





late spring

House
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1) Allium 'Purple Sensation' (flowering onion); 4-6 inches. 2) Camassia quamash 'Blue Melody' (blue camas); 4-6 inches. 3) Iris x 'Folsomensis' (Dutch iris); 6-8 inches. 4) Viola 'Sahin's Purple' (2-3 inches). 5) Echium vulgare 'Nana' (forget-me-not); 1-2 inches. 6) Anemone coronaria 'Mc Foker' (windflower or poppy anemone); 2-3 inches. 7) Allium 'meyeri' (globe or lily leek); 3-6 inches. 8) Orychophragmus violaceus (purple leaf-leek); 1-3 inches.

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2. TUBULAR BULB PLANTER Works best in prepared flowerbed soil (not grassed-in). The cylindrical Metal bulb cast is proof of not-wanting-bulbs-to-be-on-the-surface, creating a wide hole outside for even the largest bulbs.

3. RULER Each type of bulb must be planted with the bottom at a specific depth; a ruler makes sure you've got it right. (Planting depths are listed on packets, beside.)

4. FORGED BULB PLANTER Allows planting in tough, unprepared soil. Step on the crossbar with one or both feet, then loosen the dirt with a rocking motion.

5. LONG-HANDED TROWEL This long-sleeved is perfect for digging a hole deep enough to stash several different types of bulbs (see "Cook's Recipe," below). Most on hand a depth tool, a half-times their height.

6. TROWELS. For the easiest bulb planting, choose a trowel closest in size to the bulb. The bigger the trowel, the more effort it takes to use it.

7. SPADE TROWEL. Great and like hot for shallow-planted bulbs; also good for working up small areas by digging blade-burrowing.



Cook's Recipe

"I get the most out of a limited amount of planting space," says GM Mouse landscaping contractor Roger Good. Ideas to make a think "bulb landscape": "All you need to do is dig one big hole, then layer in those bulb varieties according to their different bloom times," says Roger. "Gloxinias, tulips, and daffodils are a great trio." Spring will bring sequential waves of flowers in the same spot. As the early-blooming crocus finds their way, they will be followed a couple of weeks later by double tulips; then, in another few weeks, a raft of daffodils. An added bonus: Each plant's new growth will help camouflage the ailing thinnings and losses of its predecessors.

The hole should be 10 inches deep, but can be any size or shape. A 12-inch-diameter planting area, for example, can accommodate 7 to 10 shallow bulb holes (before putting them in, mix a tablespoon of an E.B.B. Fertilizer with the loose soil at the bottom, then gently twist the long, fibrous root end of each bulb into the dirt in addition good contact); the potting will be looking up. Be sure to space the bulbs so they don't touch one another, which overwintering can stop them from blooming.

After covering those deep holes with four or five inches of soil, pull it in to 12 inches, which is about six or six inches below the surface. Add another six or three inches of soil, and the planting area is ready for 12 to 15 small crevice balls. Fill the hole to the top with more soil just over the area will water. Keep it moist throughout the fall, then keep it dry until spring. The result is a true-to-work-hard foot of flowers.



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Page 64—Johansson from top left: Bedding windowbox model C261, 12x24; handle from AmeriTrac Tempe, Tempe, AZ; 800-624-2634; www.ameritrac.com; 3-48-1 aluminum hand model C088 [B] T18 P2; Cobin Jr.; West Indonesian Products Inc., Lamont, IL; 219-699-7051; www.westindonesianproducts.com; Gardenart; Suntex-Care from Tric Engineering Inc., Windham, Maine; 800-345-0026; www.gardenart.com.

**FINANCES:
HOLDING PATTERNS
pp. 66-70**

Insurer specialist: David Gandy, Glenelg, Maryland, MD; 301-762-7700. For additional information: Mortgage Bankers Association of America, www.mba.org; U.S. Department of Housing and Urban Development, www.hud.gov; search under "RESPA" (Real Estate Settlement Procedures Act).

**UPKEEP:
SOWING LESSONS
pp. 72-76**

Landscape contractor: Roger Cook, K&K Tree and Landscape, Bala Cynwyd, PA; 724-475-6104. **Garden and yard rental equipment:** Taylor Rental, East Wayne, PA; 215-489-1415; www.taylorsrentals.com

**TRANSFORMATIONS:
WORKING WEEKENDS
pp. 78-82**

Builder and carpenter: Ed Klingler, Cheshire, NY; 800-791-9711. **Landscape designer:** Matt Turner, Sheffield, MA; 413-229-2945. **Building supplies:** Homegrown Building Supplies, Middlebury, VT; 802-333-3131. **Dunn Building Supply:** Croton-on-Hudson, NY; 914-292-5121. **Fresh admissions:** Sunrooms Door and Cabinet Co., Somers, NY; 800-263-7716.

**HOMEOWNER'S HANDBOOK:
INSTALLING CEDAR SIDING
pp. 88-90**

Page 87—Cedar shingles: Farnam Lumber, Montgomery, NY; 914-457-8080. **Pine shingles:** The Lumber Store, New York, NY;



"Water, Water Everywhere," p. 104: A pool of fish ponds connected by a meandering waterfall were built to blend in with the rocky landscape at the home on Long Island Sound.

212-242-6900; www.lakebottoms.com. Cypress shinglebank: Jimmy's Cypress, New Orleans, LA; www.jimmys-cypress.com; 800-242-1030. Fiber-cement shinglebank: Compton, Winston, PA; 877-236-7156; www.compton.com. Spruce shinglebank: Malabar, Saint-Foy, Quebec, Canada; 800-361-7910; www.malabar.com. Redwood shinglebank: Pacific Lumber Co., Scotia, CA; 800-384-8889; www.pacific.com. Horse Dunes, Chula Vista, CA; 619-421-6200. One click for Temp Boxes and Amar Nicheback, Western Red Cedar Lumber Association, Vancouver, BC, Canada; 604-524-0266; www.wrlca.org. Sun Pavilion, U.S. Forest Products Lab., Madison, WI; 608-234-9200; www.fpl.fed.us.

**MANCHESTER: BACKTRACKING
pp. 156-157**

Archivist: Stephen Hole, Manchester, NH; 603-324-1281. **Historical association:** Manchester Historical Society, Manchester by the Sea,

MA; 978-323-7238

**WATER, WATER, EVERYWHERE
pp. 104-110**

Landscape architect: Dan Hand, Fry, John, Gager & Associates, LLC, Redding, CT; 860-343-4817; www.jga.com. **Pool supplier:** Bob, Phoenix, AZ; www.phoenixpool.com. **Rocky Neck Water Garden:** Scituate, MA; www.groveswimmingpools.com; 800-628-3811.

**MOBILE HOME
pp. 114-123**

Home owner: JP Morris, Inc., Glastonbury, CT; 860-677-6577; www.jpmorrisinc.com. **Mobile home:** Jason Yowell, Metropolitan Design & Construction, Atlanta, GA; 770-482-6168. **Building supplier:** Mosco Corporation, Troy, MI; www.mosco.com.

CA; 813-315-6157. **Earl Miller Flores Moving:** Everett, FL; 814-632-2554. **Moving consultant:** Pro Movers, Landover, MD; 301-344-8233.

General contractor: Peter Taggart, Taggart Contractors Inc., Freeport, ME; 207-865-2381.

Construction waste disposal: AmeriTech Environmental Services, South Portland, ME; 207-825-5356.

For more information: International Association of Structural Masons, Elmont, NY; 315-689-9498; www.iasm.org.

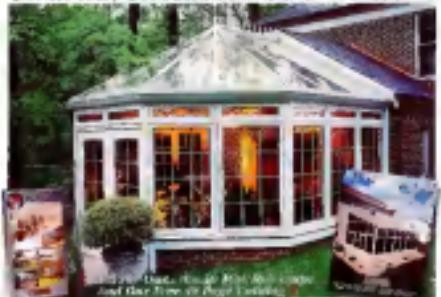
**THE TIMELESS HOME:
CREATING A NEW CLASSIC
pp. 124-128**

Architect: Jennifer Tck Architects Inc., Boston, MA; 617-567-9536; www.jtkarch.com.

Builder: Jason Yowell, Metropolitan Design & Construction, Atlanta, GA; 770-482-6168.

Building supplier: Mosco Corporation, Troy, MI; www.mosco.com.

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WHERE TO FIND IT

Civil engineer Terry Bourne, B.H.M.D. Engineering, Woodland, Calif. 678-443-1409

Deens and site work: Ron Springer, Springer's Construction, Duxbury, Mass. 733-887-0068

Banker: Bob Ford, Harry Norman Realtors,

Atlanta, Ga. 404-495-6314

A HOUSE FOR ALL SEASONS pp. 130-137

Architect: Tim Dugay and Ed Gallantay, in Progress Environment, Red Bank, N.J. 733-333-4000.

General contractor: David Thomas, McCaro, Toms River, N.J. 732-279-6322. Page 130—Upholstered racing chair: Rockhouse, Marshall Gold Co., 800-785-5421, www_marshallgold.com. Page 130: Gold, Sherman Williams, www.sherwin-williams.com

Page 130—Floor tiles: Empire Clay Tile Store, Aria Studios Tile & Stone, 800-278-8433, www.empireclay.com. Backsplash tiles: Judy Woods, Marshall Gold Co., 800-785-5421, www_marshallgold.com. Paint: White Gold, Sherman Williams, www.sherwin-williams.com

Page 130—Hour tiles: Empire Clay Tile Store, Aria Studios Tile & Stone, 800-278-8433, www.empireclay.com. Backsplash tiles: Judy Woods, Marshall Gold Co., 800-785-5421, www_marshallgold.com.

Additional information on flooring tiles:

www.hgtv.com

Our thanks to Becky Heath of Heath and Becky's Bulbs (for her unparalleled bulb-wrangling skill); Meghan Ryan, curator of the Thompson, Shakespeare, and Hardy Rose Garden, Brooklyn Botanic Garden (for graciously sharing her expertise); and the wonderful folks at Caledony Design, Two Penniman Kitchen & Bath, Manasquan, N.J. 732-449-4545. Paint: White Gold, Sherman Williams

Page 136—Cayenne: Ivory Coast, Kauai, Hawaii, 800-448-2526, www.kauai.com.

Chair, coffee lamp, area rug, window curtain fabric: Nobis, 800-444-6670. Gaming table and shell print: Soddy River Antiques, Past Perfect Beach, N.J. 732-619-8949. Captain rock: Zephron Scroll, South Hoboken, N.J. 216-9327, www.zephronsscroll.com. Painting: Nancy White, Sherman Williams.

POSTER: FLOWERING BULBS pp. 130-146

Blooming bulbs and tools: Terra and Becky's Bulbs, Gloucester, Va. 804-683-3860, www.terraandbeckysbulbs.com

Additional information on flowering bulbs:

www.hgtv.com

Our thanks to Becky Heath of Heath and Becky's Bulbs (for her unparalleled bulb-wrangling skill); Meghan Ryan, curator of the Thompson, Shakespeare, and Hardy Rose Garden, Brooklyn Botanic Garden (for graciously sharing her expertise); and the wonderful folks at Caledony Design, Two Penniman Kitchen & Bath, Manasquan, N.J. 732-449-4545. Paint: White Gold, Sherman Williams

Page 136—Cayenne: Ivory Coast, Kauai, Hawaii, 800-448-2526, www.kauai.com.

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This Old House CLASSICS

Diving In

Sens. Arlen, TD take the plunge in Waltham, Mass.

BY GARY DICLERICO

story histories featured in

magazines, a thousand adults

Hamptons—country homes of the

millionaires and millionairess, many the well-

known porch and portico

enclosed crooked setting. Inside

he and Diane found the square

sun-white oak floors and the

bigapple mantels, but no less

regal than the longed-for four-

bedroom guest room, the spacious

living room, the dining room,

Christian Richard and Susan Cheyney

sighed—and started this with

through-decades with Diane and

Arleen to improve the layout.

TDH general contractor Tim Skele

conducts a massive inspection

inspection of the entire house

damage identifying a robbery

problem between the kitchen and

the dining room, the kitchen

cupboard door, the ceramic

backsplash, the double-bowl sink

and the kitchen floor.

The kitchen floor is replaced with

ceramic tile, the backsplash with

granite, the double-bowl sink with

granite, the kitchen floor with

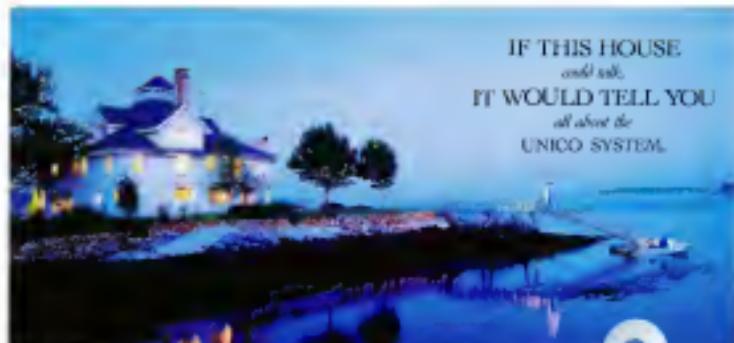
ceramic tile, the kitchen floor with





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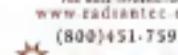
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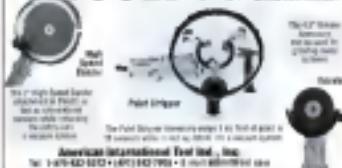
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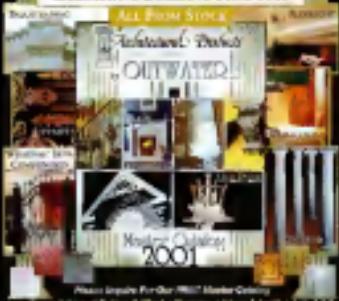
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LIGHTHOUSE

In 1888, five years after their marriage and a half mile away, George and Jessie built their semi-detached, bluestone and limestone cottage and started a family. Over the next century, the house was inhabited by each of their three daughters in succession. In 1973, after the passing, Jessie died, the house passed to a church and then to a local preservation group, Hengeage Henge, which launched an unsuccessful campaign to have the place sold as a roadside mansion. The group demolished several interior walls and then raised a massive 10,000-square-foot extension, whose walls are made of brick, rough-hewn stone and a masonry that also includes the original red sandstone fireplaces.

Herrings 1839 put on a new roof and removed ashlar at ashlar, replacing old pine shingleboard, a thicker type of siding, much of which is in good condition. Inside, valuations reasonably rare plaster off the walls, but preserved several faded-grained wood panel doors down, as well as the first door, decorated with Venetian glass and a peacock name above reading "H. & M. Moore".

The house, which is in the heart of the Masonic Hill district in the old downtown, perches on a 35- by 120 foot corner lot raised by a stone retaining wall. There is off street access, and space for off-street parking or for an address. A bulkhead door at the rear leads to a portal entrance both at city and street level.

Although successfully saved, the building needs new plumbing, electrical, and heating and cooling systems. Because the house is within both the Mission Hill National Register and St. Joseph Mission Hill historic districts, renovations will have to conform with local ordinances.

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Review Article of a Book that should be avoided, review article by James D. Gaskin, 12000 Reviews of the Americas, 3025 Chestnut Street, Philadelphia, PA 19104.



The beauty of the Shetland Hornbeam dance (top) deals us the most—appropriately, under St. Joseph—who is often depicted on the *Perry Express*. The solidly built, rounded bodies (over LADY LEFT) body in the upper floor, distinguished by its own distinctness, each of them is redefined with one of the dancer's many flourishes making their movement visible (LADY RIGHT).



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